

AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT NO. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, JUNE 7, 1834.

[VOLUME III.—No. 22.

CONTENTS :

Rensselaer and Saratoga Railroad ; The Saratoga and Schenectady Railroad ; Worcester Railroad ; Pennsylvania Railroad ; Rapid Travelling ; Canals ; Cape Fear, Yadkin and PeeDee Railroad ; New Iron Steam Boat, &c.	page 337
Specification of a Patent for an Improvement in Wheels for Cars and Locomotive Engines, to be used upon Railroads, granted to Ross Winans, Civil Engineer ; Effectual Plan of Heating Factories, &c. by Steam.	338
Statistics of French Manufactures.	339
Transportation on the Pennsylvania Railroad.	340
The Iron Steamboat, Alburkha ; The Troy Steamboat ; Internal Improvement, &c.	341
Animal Mechanics, or Proofs of Design in the Animal Frame, continued.	342
Indian Rubber Water-Proof ; The Chinese Wall.	343
Years ; Cream of Tartar.	344
Agriculture, &c.	344
Literary Notices.	346
Summary—Domestic and Foreign.	348
Poetry—They tell me life &c. ; Advertisements.	351
Later from Europe ; Advertisements, &c.	352

AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JUNE 7, 1834.

RAILROADS—WIDTH OF TRACKS—UNIFORMITY OF.—Those of our readers who have taken the Journal from its commencement, will probably recollect a communication published in No. 4, Vol. 1, showing the importance of uniformity in the width of railroad tracks. We have occasionally referred to the subject as one requiring early and particular attention. It will at once be seen that, by a variation of three, or even two inches, in the space between the rails of roads, now distinct, but destined hereafter to be united,—as, for instance, the *South Carolina*, the *Tuscumbia*, and other roads, which, to the extent of many hundred miles, will, within the next ten years, be connected with them,—the engines and cars of one road cannot be used upon the other roads, and therefore a transhipment will be necessary, at the termination of each part of what should be one great whole.

THE SARATOGA AND SCHENECTADY RAILROAD.—The locomotive engine commenced its regular trips on this road on Wednesday the 28th ult.; on which occasion a party of gentlemen from this village and Ballston Spa, were politely invited by John B. Lasala, Esq., one of the directors and a principal stockholder, to join in the festivities of the occasion. They repaired to Schenectady in a railroad barouche, where they were joined by two of the directors. The engine left that place a little before 12,

and reached this village, drawing a train of 12 or 14 carriages and waggons, in one hour and twenty minutes. The party repaired to the Pavilion, where they partook of the hospitality of Mr. Lasala in a rich and sumptuous dinner. After the drinking of several toasts, the party separated at an early hour, happy in the polite attentions they had received, and gratified in having witnessed the good condition of the road, and the increasing and flattering prospects of business thereon. Indeed, the travel is continually augmenting; and it is a source of no small pleasure, that the various estimates of income heretofore given are likely to be more than realized. Though not immediately connected with the work, we cannot but feel a deep and lively interest in its prosperity, and in every thing pertaining to the welfare of its stockholders.

Another engine, we understand, will be placed on the road in a short time.—[Saratoga Sentinel.]

RENSSELAER AND SARATOGA RAILROAD.—This road, from Ballston Spa to Waterford, is under contract, and the work of constructing it in progress. The building of the bridges over the Hudson and Mohawk, and also the road itself from this to Waterford, will be put under contract without delay.

The officers of the company for the present year are as follows—they were chosen at an election held yesterday :

Stephen Warren, President, (Richard P. Hart having declined a re-election.)

Directors—Elisha Tibbitts, George Griswold, John Cramer, John Knickerbacker, Richard P. Hart, Townsend McCoun, Nathan Warren, Stephen Warren, George Vail Le Grand Cannon, Moses Williams, John P. Cushman, and John Paine.—[Troy Press.]

Extract of a letter dated Boston, May 30, 1834 :

“ Our Worcester Railroad is doing very well. The cars paid \$900 last week, \$700 of which is clear profit, beyond the expense of their management of \$100 a day, which is an interest on the whole \$600,000 which has been assessed. The weather, besides, has been unusually bad, and so cold, that few persons comparatively have gone out. I think therefore that the stock will eventually be very productive. They now only run seven miles, but will, in a few days, go thirteen miles, which is the first stage towards Worcester. A friend of mine came today from Newton in 19 minutes with a watch in his hand. They have at other times landed in fifteen minutes, which is at the rate of twenty-eight miles an hour. At this rate but few will go in the stage, which, including stops, takes an hour and a half.”—[Jour. Com.]

PENNSYLVANIA RAILROAD.—The advantages of this great state work are already becoming developed. On Thursday afternoon, a lot of 80 bbls. superfine flour, from Columbia, was brought to the depot corner of Vine and Broad streets. This is the first flour that has been brought from the Susquehanna by this route. A lot of between 2 and 300 bushels of corn has also been received from Columbia by this road.—[Phil. Com. Her.]

RAPID TRAVELLING.—Yesterday, the passengers by the Railroad line from New-York were landed at ten minutes past one o'clock. Our exchange papers brought by this conveyance were delivered at our office at eighteen minutes after one.—[Ibid.]

CANALS.—The Eastern Division of the Pennsylvania Canal, the Lehigh, and the Morris Canals, are now in excellent navigable order, and, we are pleased to learn, are doing a brisk business. An arrangement has been made with the directors of the Morris Canal for transporting a large quantity of coal from the Mauch Chunk mines to Newark, and other points along the line of this work. This arrangement cannot but be highly advantageous to those interested in the mines, as well as to the owners of the canal stock. Paterson and other places will also come in for a share of the benefits of this arrangement.—[Ibid.]

The corner stone of the Cape Fear, Yadkin and PeeDee Railroad, was laid with imposing ceremonies at Fayetteville, on the 15th instant, an interesting account of which appears in the last *Observer*, and shall be transferred to our columns next week.—[Raleigh Register.]

NEW IRON STEAMBOAT, &c.—We recommend to the attention of the public, the advertisement of our late highly enterprising and public spirited townsman, G. B. Lamar, Esq. (now of Savannah,) whose efforts in facilitating the river communication between this city and Savannah—and particularly the present one, now nearly completed, of a new Iron Steamboat—are worthy of the highest praise, and we hope will insure to him the great success they merit. This Iron Boat is the first of the kind ever introduced into this country, and we doubt not will prove to be one of the most valuable commercial facilities it possesses.—[Augusta Chronicle.]

ECONOMY.—He who saves in one way, that he may enjoy his savings in a more rational one, is the true philosopher: he will do good while living, and be remembered with respect when dead.

Specification of a Patent for an Improvement in Wheels for Cars and Locomotive Engines, to be used upon Railroads. Granted to ROSS WINANS, Civil Engineer, city of Baltimore, November 19, 1833.

To all whom it may concern, be it known that I, Ross Winans, of the city of Baltimore, in the state of Maryland, Civil Engineer, have invented an improved mode of constructing wheels for cars and locomotive engines, to be used upon railroads, and that the following is a full and exact description thereof.

The more clearly to exhibit the difference between my improved wheel and those which have been heretofore employed, I will briefly point out the manner in which wheels for this purpose have been most commonly made; not intending, however, as it is not necessary for the purpose in view, to notice all the plans which have been adopted.

1st. Such wheels have been made wholly, or nearly so, of cast iron; the face, or tread of them, being cast within a *chill*, consisting of a thick rim, or hoop, of iron, which forms a part of the mould.

2d. The wheels have been cast without being chilled, and afterwards hooped with wrought iron, which then forms the face and flanch of the wheel.

3d. A cast iron nave, or hub, has been made to receive wooden spokes, inserted in wooden felloes, which were hooped with a tire of wrought iron.

4th. The hubs have been of cast iron, with spokes of wrought iron, and a rim of wrought or of cast iron, hooped with wrought iron.

These plans have each their respective advantages and disadvantages, but neither of them has fully answered the purpose for which it has been adopted; the wrought iron hoop, or tire, upon the cast iron rims have gradually become loosened; the wooden spokes and felloes have pressed the one into the other, and the tire has ceased to bind them, an evil which wedging will not cure. To remedy these defects, and others incident to some of the wheels, is the object of my improvement.

My wheel consists essentially of three parts, namely, an *interior wheel*, the hub, spokes, and rim of which are of cast iron; a *rim of wood*, formed in a way to be presently described, surrounding the cast iron wheel; a *hoop or tire of wrought iron*, surrounding the wood, and forming the face, or tread, of the wheel.

The *inner wheel* is made, in some respects, like those first noticed, but the face is not chilled, nor has it the same form with the chilled face. It should be made of the same width on the rim, with the wrought iron tire which is to surround and form the tread of the wheel, say five inches. The face of the cast rim may be cylindrical for the greater part of its width, but it must in this case have a fillet, or edge, projecting up on each side of it, say to the height, and of the thickness, of half an inch, which will then give to it the appearance of a wheel with a double flanch, having a cylindrical tread of four inches in width. Instead of making the face in this form, I intend sometimes to give to it a regular declination from each edge towards the centre. A section of the rim, transversely, would then be somewhat in the form of the letter V, but with the angle obtuse. The inclination will be sufficient if the diameter at

the centre of the rim is one inch less than that at the sides, or edges. Other forms may be given to the face of the rim, by which the object in view may be attained, namely, that of retaining the wooden rim in its place, without its allowing it to move out on either side.

A *rim of wood* is to be placed around this wheel, which may consist of any convenient number of pieces, fitted to each other, and to the face of the wheel. The grain of the wood is to cross the rim of the wheel, running parallel with its axis. These pieces may be fitted to the face of the wheel with greater facility by driving them into a large hoop, running as a chuck in a lathe, by which means they may be turned to the form required; they may then be fastened on to the rim by wood screws, or otherwise, and turned thereon to receive the iron hoop or tire. The best thickness of this rim will be from two to four inches.

The *hoop, or tire, of wrought iron*, is to be made in the usual form, turned truly, and passed on over the wooden rim when expanded by heating it as highly as may be done without burning the wood. Bolts are then to be passed through the wrought iron, the wood, and the cast iron rims, which are secured by nuts, to confine the whole together.

The hub, or nave, in a wheel thus made, may be cast entire, instead of having those divisions, or openings, which are necessary in the chilled wheel, to allow for contraction. Although I have described the spokes and rim as being of cast iron, either or both of them may be of wrought iron, but it would be more costly, without affording any adequate advantages; those of cast iron being perfectly safe in this mode of construction.

It will be readily perceived that the wood, thus pressed between two hoops of iron, has an extent of bearing surface which will effectually prevent its being condensed by the force to which it is subjected; whilst, by its elasticity, it will tend to preserve both the road and the vehicles passing over it. If perfectly dried when put on, which may be done by artificial heat, the wood will never shrink, but, on the contrary, will expand, and render all the parts the more firm. Such a wheel will have less tendency than any other, where wood is employed, to get out of truth; and should wedging become necessary, it may be done more effectually than with any other.

The dimensions of most of the parts of such a wheel need not differ greatly from those of the cast iron wheels with chilled rims, but, like them, must vary according to their diameter, and the load they are to sustain; the following is a good proportion for wheels of three feet in diameter, intended for cars carrying three tons.

Cast iron interior wheel, twenty-nine inches diameter; hub, seven inches long by six in diameter; spokes, twelve in number, five-eighths of an inch thick, and three and a half or four inches broad; rim, five inches broad by five-eighths of an inch thick; wooden rim, two and five-eighths inches thick, five inches deep, measuring across the rim; wrought iron tire, seven-eighths of an inch thick, five inches broad; flanch, one and one-fourth inch deep, one inch thick.

Although I have described the rim of wood as placed with its grain crossing the rim of the wheel, and am fully convinced

that this is the best manner of placing it, yet it will answer the purpose, to a considerable extent, when running in the direction of the rim, and I do not intend, therefore, to limit myself in this respect, as what I claim as my invention is the interposing a rim or belt of wood between an interior wheel of cast or of wrought iron, and a wrought iron rim or tire, and securing the whole together in the manner and for the purposes hereinbefore set forth.

ROSS WINANS.

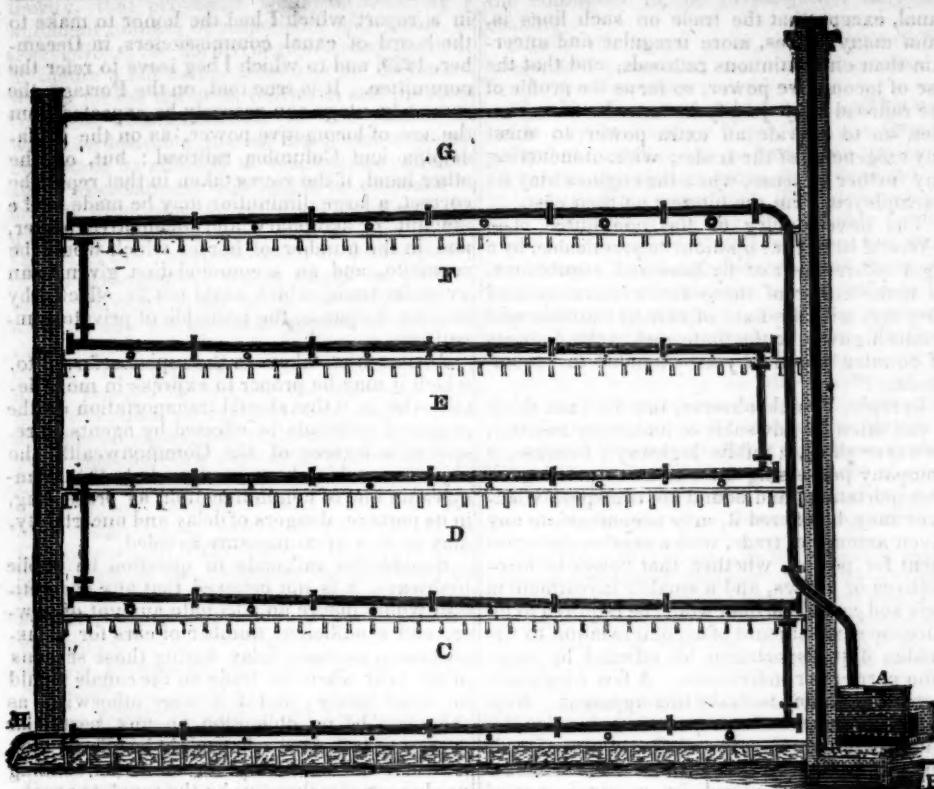
Effectual Plan of Heating Factories, &c., by Steam. Communicated by the INVENTOR. To the Editor of the Mechanics' Magazine and Register of Inventions, &c.

[We have much pleasure in inserting the following communication from Mr. SNODGRASS, an eminent engineer of Glasgow, N. Britain, now on a visit to the United States for the purpose of ascertaining the state of manufactures and mechanical inventions here. We hope to be favored with other contributions during his tour through various parts of the country, which, we are persuaded, will be highly interesting to our readers.—ED. M. M.]

SIR,—Having perused your interesting and valuable Magazine, I beg leave to avail myself of the pleasure of contributing in a small degree what appears to me would materially benefit the rising manufactories of this justly far-famed free country, namely, the best plan of heating by steam. Although I am almost a stranger here, I learn there are, and have seen, a number of beautiful factories heated by stoves, while in Great Britain there are none, to my knowledge, otherwise than by steam. It must be evident that this method is incompatible with the American atmosphere, which in particular seasons of the year, I am told, is highly electrical, and destitute of hydrogen. Stove heat must accelerate this evil in a considerable degree, in the apartments of the factories, which are injurious to the staple of the cotton, during the process of roving and spinning, unhealthful to the workers, and a great increase of risk of accident from firing the building.

Having invented and introduced the system of heating by steam pipes, from 1799 to 1807, (see Philosophical Transactions, London, Vol. for March, 1807,) and since then having 27 years' experience, I presume to send you herewith a plain sketch of the simplest and most effectual plan of heating any regular built factory, and with steam of the lowest temperature. REFERENCES—A, the boiler; B, the ash-hole; C, 1st flat; D, 2d flat; E, 3d flat; F, 4th flat; G, garret flat; H, condensed water pipe.

On looking at the plan from right to left, the pipes are inclined according to the length of the factory, so as the air and condensed water may freely recede before the steam, then descend by the perpendicular pipe to next flat, and so on from flat to flat, after sending the steam to the garret flat in the first instance by a large upright, not less than eight or nine inches in diameter, thus allowing as little condensation as possible taking place in that pipe; it ought to be secured from the external air, and made as a reservoir of steam to the boiler. As each range of pipes descends from the garret flat, they ought to increase in diameter about a half inch in each flat, owing to the latent heat of the steam diminishing as the distance increases from the boiler. The small



copper pipe at the end of the cast iron range of pipes in the lowest flat, for the discharge of air and condensed water, may be about three-fourths of an inch in diameter. These pipes should be laid on small rollers, pivots of which to move in a small frame (cast iron) fixed on the floors, and close to the wash-board of the apartment, on any side most convenient for passing them, thus, not almost, appearing in the room, and, in the lowest position, more effectually heating the air.

The data for proportioning the diameter of these pipes to the temperature of the air in the apartments is a square foot of surface of steam pipe for 200 cubic feet of air, to produce about 64 degrees of heat, supposing the steam about 4 lbs. on the square inch of pressure above the atmosphere, and the surface of the pipes black,—160 superficial inches steam pipe for 72 degrees of heat.

I may add: the boiler may be so placed that the condensed water may be returned to the bottom, and save in a small degree the latent heat therein. Where steam engines are employed to drive the machinery, the surplus steam for a great part of the year is sufficient to heat the factory, thus saving the whole expense of fuel nearly. Insurance ought not to be more than the half, compared with the risk of stoves. If any further information is found wanting, your taking the trouble of addressing me, care of Messrs. Thomson & MacFarlane, No. 87 Pearl street, will be duly attended to by,

Sir, yours, most respectfully,

NEIL SNODGRASS,
Civil Engineer, of Glasgow.

New-York, May 5, 1834.

N. B.—In irregular built factories, much is to be attended to in the arrangement of steam apparatus, for the proper charging with steam, and discharging air and water; also, the best plan for joining the pipes to make them permanent and cheap, which I shall be glad to engineer, and insure the result; also, my metallic packings for steam engine pistons, and piston valves, a drawing and de-

scription of which shall be handed you in a short time.

N. S.

STATISTICS OF FRENCH MANUFACTURES.—The principal manufactures of France may be dated from the reign of Louis XIV., whose minister, the celebrated Colbert, invited foreign artists and artisans of every kind and of distinguished merit into the kingdom, and encouraged them by premiums to fix their establishments in France. But towards the end of his reign, that monarch, by his revocation of the Edicts of Nantes, and his persecution of the Protestants, in a great measure destroyed the advantages arising from the foreign establishments, by forcing thousands of artisans to seek refuge in England, and the Low Countries, into which they introduced those branches of industry, especially silk. Thus France lost the services of some of her most ingenious mechanics through the folly of an infatuated monarch.

To give an idea of the manufactures of France, it is sufficient to cite the draperies of Louviers, Sedan, Elbeuf, Castres; the cambries of Valenciennes and Cambray; the pier-glasses of St. Gobain, whose dimensions are occasionally ten feet in height by four and five feet broad; the cotton manufactures of St. Quentin, Rouen, &c. &c.; the linens of Brittany, Dauphiny, and the northern provinces; the laces of Lille, A-lenccon, Valenciennes, and Puy; the silks of Lyons, Avignon, Nimes, and Tours; the tapestries of the Gobelins, at Paris; the carpets of La Savonnerie and Aubusson, which, in beauty of design and brilliancy of colors, rival those of the east; the porcelain of Sevres, her manufactures of clocks and watches, jewellery, crystal, mock diamonds, bronzes, fire arms, &c. To these might be added an immense number of manufactures which were wholly unknown in France half a century ago, such as files, needles, wool-cards, &c.

We have learned from official sources, that the capital employed in manufactures

amounts to 1,820,105,409 fr., which is applied as follows:

In indigenous materials,	416,000,000 fr.
In materials imported,	186,000,000
In wages,	844,000,000

In general expenses, as wear and tear of machinery and tools, repairs, fuel, lights, interest of money, invested as fixed capital, which being deducted from the gross amount leaves 182,105,409 francs for the profit of the manufacturers,	192,000,000
--	-------------

The annual produce of the principal branches of industry in 1828 has been calculated in round numbers as follows:

Thrown silks, silk stuffs, gauzes and crapes,	160,000,000 fr.
Cloths and woollen stuffs,	250,000,000
Linen drapery and thread lace	210,000,000
Stationary,	25,000,000
Cotton,	200,000,000
Lace,	10,000,000
Hardware,	125,000,000
Coal, and other produce of mines and quarries,	30,000,000
Watches and clocks,	30,000,000
Gold and silver articles,	50,000,000
Jewellery,	40,000,000
Glass, plate glass, china, pottery, bricks,	80,000,000
Lime and plaster,	15,000,000
Salts and acids,	30,000,000
Soap,	30,000,000
Refined sugar,	15,000,000
Hats,	30,000,000
Leather,	160,000,000
Dye and varnish,	50,000,000
Perfumery,	15,000,000
Books,	30,000,000
Beer,	60,000,000
Cider and perry,	50,000,000
Brandy,	75,000,000
Upholstery and musical instruments,	50,000,000

Total, 1,820,000,000 fr.

Having enumerated the principal manufactures in France, we shall state from official information the progress made in the productions of those manufactures from 1812 to 1827. In the first place, we find that under the government of the empire, when Belgium and the left bank of the Rhine were under her dominion, France in 1812 employed in her manufactures 35 millions kilogrammes, or 70 million pounds of native wool. In 1816 the quantity of native wool, with the amount imported of foreign wool, for fine cloths, merinos, and cachemires, &c. was in the whole 80 million French pounds, which, with the difference of nearly ten per cent., is equal to 90 million lbs. English. In 1824 and 1826 the quantity of wool used in the manufactures amounted to 48 millions of kilogrammes, making an increase in the consumption of wool in 14 years of 26 millions of French pounds, or more than one million English tons.

In 1812, the quantity of cotton spun into thread did not exceed 10,362,000 kilogrammes. The consumption in 1816 amounted to 12 millions of kilogrammes; in 1825, the quantity manufactured was 26 millions; in 1826, 32 million kilogrammes of cotton employed in prints, calicoes, tulles, &c.; thus the consumption has been more than tripled in 14 years. The consumption of silk has not

loss increased in proportion to wool and cotton. In 1816, France imported 400,000 kilogrammes of silk; in 1824 and 1825, 650,000 kilogrammes; and in 1826, not less than 800,000 kilogrammes, notwithstanding the progress made and encouragement given to breeding of silk worms in the country. In 1816, the quantity of coals extracted from the mines did not exceed 1000 million kilogrammes; in 1826, they furnished 1500 million kilogrammes. In 1814 and 1816, the quantity of iron manufactured amounted to 100 millions, and in 1825 and 1826, it had increased to 160 millions of kilogrammes.—[Goldsmith's Statistics of France, and Rep. Pat. Inv.]

The following letter was read, together with, and formed a part of, the report of a committee of the Pennsylvania Legislature, appointed to inquire and report as to the best method of conducting the business of transportation upon the Pennsylvania Railroads.

It was intended that this should follow the Report, which was published in No. 15 of this volume of the Journal, but was at the time mislaid.

Letter from Moncure. Robinson, Esq., to Wm. H. Keating, Chairman, &c., dated Harrisburg, February 21, 1833.

Sir,—I have received your letter of yesterday, and with pleasure present the following reply to the questions proposed by the committee.

The first inquiry is, "on roads of the length and undulating character of the Philadelphia and Columbia railroad, or connecting two lines of canal, like the Allegany portage railroad, what are the relative advantages of transportation by horse power, or by locomotive engines?"

When the profile of a railroad is undulating, unless its grades, or ascents and descents, are very short, the useful effect of a horse is materially impaired. In other words, although in descents the force exerted by him may be but trifling, he cannot, in consequence, draw a proportionably large load on ascents. With locomotive power, the diminution in useful effect is by no means in a corresponding ratio; and provided the graduation of a railroad be not at any point too steep to admit of an engine urging on its load by the adhesion of its wheels, a large proportion of what would be its useful effect on the level may be had. The engine, on ascents, travelling at a slower rate under an increased stress; on levels, or on descents, exerting any disposable force in attaining a higher speed.

When a line of railroad is not only undulating, but a long one, the superiority of locomotive power becomes more decided. The loss of time and waste of steam in starting and stopping, become relatively of less moment, and the saving in time, by the superior velocity which locomotives enable us to attain, becomes more important. In the case of the Columbia and Philadelphia railroad, for example, four days would probably be required, with horse power, for the transportation of merchandise and produce between Columbia and Philadelphia. With locomotive power, the trips may be made with entire ease and safety in six hours, including stoppages. Supposing the cost of transportation to be the same with either power, a large accommodation would be afforded to the public, in the greatly increased speed of transportation. Persons coming to Columbia with their produce would have it in their power to travel with it to Philadelphia, and to attend personally to its disposition, without any sacrifice of time; and to the community generally, facilities in intercourse and travel, and in the transportation of the mail, would be afforded, which can scarcely be appreciated until they have been realized.

There is no peculiar reason for using locomotive power on railroads connecting lines of

canal, except that the trade on such lines is, from many causes, more irregular and uncertain than on continuous railroads, and that the use of locomotive power, so far as the profile of the railroad may justify its introduction, enables us to provide an extra power to meet any exigencies of the trade; without incurring any further expense, when the engines may be unemployed, than the interest on their cost.

The next inquiry of the committee is,— "Would it, in your opinion, be practicable, by a rigid enforcement of by-laws and regulations, to make either of these roads (connected, as they are, with the lines of canal,) valuable as a public highway to the State, and to the districts of country which they are intended to accommodate?"

In reply, I would observe, that I do not think it can often be advisable to make any railroad, however short, a public highway; because, a company possessing an exclusive privilege of transportation, and bound to transport whatever may be offered it, may accommodate any given amount of trade, with a smaller disbursement for power, whether that power be locomotives or horses, and a smaller investment in cars and carriages, than would be required to insure the same amount of accommodation to the public, if transportation be effected by common carriers or individuals. A few considerations will suffice to make this apparent. Suppose the business of transportation placed in the hands of a company, the whole amount of trade on a railroad ascertained, and the maximum transportation required in a given period known. A sufficient amount of power and an adequate number of cars and carriages may be procured, *and no more*. The necessary shops being erected, and skilful workmen provided for repairs, these last are effected economically, promptly and properly. Presuming the capital invested to be diminished, and the power employed, the number of persons occupied, and the expenditure incurred for repairs, to be lessened, the cost of transportation may obviously be reduced; and a company, although bound to transport, without the least delay, every thing which may be offered it on a railroad, may afford to do so at a lower rate than individuals possibly can.

If, however, locomotive power be looked to on the Philadelphia and Columbia railroad, (and the reasons in its favor appear, from what has been said, to be decisive,) it seems to follow, necessarily, that the railroad cannot be a public highway. Setting aside the difficulties, and, I might add, the impracticability of adopting such a police, and enforcing such by-laws and regulations as would in that case be necessary, other considerations lead to the conclusion that, even were it practicable, there would be no advantage in transportation by locomotives on a public highway.

To make use of locomotives on a line of railroad, it is necessary that an adequate number of engines should be provided, to guard against danger of delay from accidents or other causes; that warehouses, depots, engine-sheds, and water stations, should be erected; that there should be shops with competent workmen, at different points on the line of railroad, to effect repairs without delay, and to keep the engines, cars, and other vehicles used on it, in the most perfect order. It is evident that no individual would be willing to make the permanent disbursement necessary to effect transportation advantageously with this description of a power, on a railroad entirely open; that if attempted at all, it would necessarily be also a charge to the producer, or owner, which would not be necessary under such a system as would afford to an individual or a company, a guarantee of a regular and permanent business, correspondent to the outlay which would be necessary to accommodate it effectually.

Different, but not less forcible reasons, make it, in my opinion, very unadvisable to leave it to private competition to provide the means of transportation on the Allegany Portage. These reasons are given in some detail,

in a report which I had the honor to make to the board of canal commissioners, in December, 1829, and to which I beg leave to refer the committee. It is true that, on the Portage, the same advantage can scarcely be expected from the use of locomotive power, as on the Philadelphia and Columbia railroad; but, on the other hand, if the views taken in that report be correct, a large diminution may be made in the amount of stationary and locomotive power, and in the number of horses which would be requisite, and an accommodation given to an irregular trade, which could not be effected by leaving it open to the principle of private competition.

A view was taken in the report referred to, which it may be proper to express in more detail—this is, "that should transportation on the proposed railroads be effected by agents or responsible lessees of the Commonwealth, the objections which have been made to the Pennsylvania line of communication, as presenting, in its portage, dangers of delay and uncertainty, may be in a great measure avoided."

Should the railroads in question be public highways, it is not believed that any competition would insure an adequate amount of power, and a sufficient number of cars for transportation, to avoid delay during those seasons of the year when the trade on the canals would be most active; and if it were otherwise, as there can be no obligation on any particular carrier to transport what might be offered him, it would be necessary for an owner sending produce or merchandise by the canal, to accompany it, or to engage the services of an agent on whom he could depend, at the point of transhipment, to forward it. It would be otherwise, under either of the arrangements which have been suggested; it would be only necessary, in either case, to consign it to the care of the transporting agent at Columbia, or at either of the points of termination of the Allegany Portage, as the case might be, and the articles consigned would, as a matter of course, be forwarded without delay or risk, to the proper address.

The perfect facility and certainty which may be given to the largest business, under the arrangement proposed, may be judged of from the accommodation afforded by the Manchester and Liverpool railroad. On that railroad, a trade and travel so far unexampled, and certainly beyond what may be anticipated for many years on any line of railroad in this country, are accommodated daily without the least delay, interruption or embarrassment, on two tracks of rails; and the line (to use the expression of the board of directors) appears ordinarily "almost a desert." Indeed, under proper regulations, there appears to be no limit to the business which a double track of railroad, under proper regulations, can accommodate. In this respect, the most spacious canal cannot compare with it, because the capability of this last is necessarily limited by the number of boats which can be passed through its lock of greatest lift in a given time. It is not, however, hazarding too much to say that, with trade very inconsiderable in comparison with the present trade of the Manchester and Liverpool railroad, the most serious embarrassments might be anticipated on a railroad on which transportation should be effected by individuals.

The third inquiry of the committee is, "would you recommend that the Commonwealth, by its officers, should become the transporter; or that the improvement should be leased for a term of years to a company, that should be bound to transport at certain specified rates of toll and transportation?"

I should think the latter plan the more advisable. I can entertain no doubt that, after a very short period, an estimate, sufficiently accurate, of the amount of trade on each of the two railroads, might be made, to admit of an arrangement between the Commonwealth and a transporting company, which would be fair and equitable; and if certain rates of toll and transportation were fixed on by the proper au-

thority, that proposals would be made by a sufficient number of responsible individuals, or associations, for the privilege of transportation, to insure a fair compensation to the Commonwealth for the use of its railroads, and the most complete accommodation to the public. It would be desirable, that as much time as possible should be afforded to responsible individuals or associations, who might be disposed to submit proposals, to make the necessary inquiry and investigations, and to enable the agents of the Commonwealth to act advisedly in any arrangement which might be entered into. No delay in the use of the railroads, as soon as any considerable portion of either of them was in readiness, need result from this cause. The officers of the Commonwealth might proceed to procure the necessary locomotive engines, cars and carriages, and to make all other arrangements, in the same manner as if the Commonwealth were to be the transporter. If an arrangement was made with a transporting company, the engines and cars, if of suitable construction, would be received of the Commonwealth without loss. If no disposition was made of the railroads, the agents of the Commonwealth would then be prepared to effect the transportation of passengers and merchandise at the earliest moment after the roads, or any productive portion of them, were in readiness.

The fourth inquiry of the committee is, in the event of a lease to a transporting company, "what would be necessary, on the part of the Commonwealth, beyond the completion of the railroads, and what precautions should be taken to insure their preservation?"

This inquiry has been in part answered in what has already been said. In order to accommodate the trade on two important lines of railroad, constructed by the Commonwealth, extensive warehouses would be necessary at the points of termination of the Philadelphia and Columbia, and Allegany Portage railroads, and probably others of a smaller size at many points on the line of the former. Workshops for the purpose of repairing both engines and cars, and water stations and engine sheds, would be necessary on each line. An adequate provision, in these respects, might be made by the Commonwealth in the first instance, with a view to more extensive arrangements, as the trade might require them.

In order to insure the preservation of the railroads, it might be made the duty of the transporting company on each road, to keep the line of railroad in good order, with permission to make such extensions, in the way of turn-outs, turning platforms, warehouses, and repairing shops, as experience might show to be necessary. Or an officer of the Commonwealth might be kept on each railroad, for the purpose of making such repairs and extensions.

In the former case, a company would, of course, expect any necessary disbursements for repairs of the railroad, or extensions, to be an offset in the payment of its annual dues. It would therefore be proper for the Commonwealth to guard against unnecessary or injudicious expenditure, by providing that no claims for repairs or extensions should be paid, unless the expenditure were made on the authority of some engineer of standing, and except on his certificate that the same had been judiciously made; or, the disbursements made by a company might be submitted annually to such an engineer, and subjected to any deductions which he might deem reasonable.

I believe, sir, that I have now replied to the different queries of the committee. I fear I may not have explained my views as clearly as I would have wished. I must plead, as my apology for the hasty manner in which they are presented, the necessity of leaving Harrisburgh to-morrow morning, and the little time consequently at my disposal. Such as they are, they are with great pleasure submitted; and I shall be gratified if they should prove of use to

the committee in the investigation they are making.

I have the honor to be, very respectfully, your obedient servant, M. ROBINSON.

THE IRON STEAMBOAT ALBURKHA.—This vessel is now in the river Niger, with the Quorra steamboat, and seems to have been the favorite of the two vessels since they departed on their interesting expedition. The advantages of iron vessels in warm climates are ably pointed out in a short extract we gave in our last number from Chambers' Journal; and these advantages seem in no wise exaggerated in the instance of the Alburkha, according to reports received from those embarked in her. This vessel was built by Mr. Laird, of Liverpool, for the purpose of navigating the shoal water of the river, and we understand that he has since constructed another for the interior navigation of Ireland. We have no doubt that these vessels, from their vast superiority over those of wood, and their durable quality, will speedily be numerously employed.—[Nautical Magazine.]

THE TROY STEAMBOAT.—By the following extract from the "Annual Register" for 1785—("Occurrences" p. 95)—it would appear that this boat is not of a new construction.* The only difference between it and that here described, seems to be in the propelling power, the one being by steam and the other by sails.

"EDINBURGH, Dec. 3.—Yesterday an experiment was made at Leith on a vessel of a new construction, the invention of a gentleman of this city. She consists of a vessel of about sixty feet long and seven broad, cut into lengthways, the sections placed at about seven feet distance, and joined at top by strong beams planked over, so as to represent upon deck a vessel of the ordinary proportions, 60 feet by 15. The experiment fully answered expectation, notwithstanding one of the principal sails was by accident, prevented from being properly set. She was attended by the king's boat at Leith, which is reckoned a fast sailing boat of her size; but the new vessel outsailed her, and when the breeze increased left her about a mile in four. It was found that the above vessel is capable of carrying double the quantity of sail of one of the ordinary construction and of the same length and breadth, and has this peculiar advantage that she only draws two feet and a half of water."

The gain by this construction, as in the Troy boat, is in an increase of speed and a diminution of the draft of water.—[Nat. Gaz.]

* There is this other difference, that Mr. Burden's boat consists of two perfect cylinders.—[Ed. N. Y. Am.]

Internal Improvement.—The good people of the upper part of the State are putting their shoulders to the wheel in the great cause of internal improvement. The contemplated rail road from Athens to Augusta is now employing all their energies. The last Banner says, "our public spirited townsmen, Messrs. Williams, Canak and Shannon, returned a few days since from the counties of Greene and Morgan, where they had been for the purpose of procuring subscriptions to the stock of the Georgia Rail Road Company. Their success in those counties was truly gratifying to the friends of internal improvements, and places the entire success of the project beyond a doubt. We now look upon the matter as entirely settled. A very short time will witness the commencement of a system of internal improvement in Georgia, which must, at no distant day, place her proudly by the side of her most exalted and flourishing sisters."—[Georgian.]

[From the *Journal of Commerce*.]

SUPERIOR COURT—MAY 27.—JUDGE JONES, presiding.
Miles Burke against the Camden and Amboy Rail Road and Transportation Line.—Damage laid at \$1000.

This was an action to recover damages for injuries done to plaintiff's goods, whilst being forwarded by defendants from Philadelphia to New York.

From the evidence adduced on the part of the plaintiff, it appeared that his son, Master Joseph Burke, left Philadelphia on the 21st of December last in the defendants' steam boat. On that occasion, Master Burke brought with him his own private wardrobe, a theatrical wardrobe, containing forty or fifty dresses, two violins and a trunk full of music in print and manuscript. The baggage thus designated exceeded in weight what passengers are permitted to carry without paying for it, and \$1 50 charged for the surplus.

The baggage of all the passengers in the steam boat was put in a wooden crate or crib, which remained on the deck of the steam boat until it reached Borden town. The crate with its contents was then being lifted from the boat by a crane which stood on the wharf, and whilst it was suspended in the air, the strap of the crane broke and the crate fell into the water, where it remained about twenty minutes before it was raised out of it. Master Burke's baggage was in consequence entirely saturated with water. The value of the property before this accident, was estimated at \$200 for the two fiddles, \$300 for the music, and from \$1000 to \$1600 for the dresses, all of which articles were considerably injured, and some of them rendered altogether useless by their immersion in the water.

In bringing the action, the plaintiff regarded the defendants as common Carriers, and on that ground sought to render them responsible. They also endeavored to show that the defendants were guilty of negligence in not having sufficiently manned the rope before the accident, and having used it for too long a period without repair or renewal. The defendants admitted that the rope was not calculated to last more than a year, and it had been nearly eight months in use when the accident occurred. When the rope broke, a thicker one was substituted in its place, which the plaintiff maintained was a tacit admission that the first rope was not sufficiently strong.

On the part of the defence, Master Burke was cross examined as to his age, and how the profits of his profession as an actor were applied by his father.

To these questions he answered that he did not consider himself more than 15 years old, that he had been an actor during the last ten years, and was altogether ignorant how his father applied the profits derived from his [Master Burke's] acting.

The object of the defendants' counsel in putting these questions, was to show that the property on account of which this action was brought, had been purchased with the profits of Master Burke's acting, and also with a design to show that these profits were received and retained by the plaintiff merely in trust for his son;—in which case the present action should have been brought in the name of Master Burke's guardian.

The Court remarked that the father was entitled to his son's earnings, and unless it could be shown that his father had invested those earnings in his son's name, or had made a written agreement on the subject, the counsel's objection would not hold good.

It was then contended that the public notice given by the defendants in their advertisements, &c. that all baggage should be carried at the risk of the traveller, rendered the present case different from that of common carriers, and prevented the defendants being liable unless they had neglected to provide proper and sufficient means of transport. That in the present case, the sufficiency of transport having been provided, depended whether the crane was sufficient for the purpose of raising the crate from on board, and to prove that it was, several witnesses were called, who deposed that the strap attached to the crane was formed of a rope 4 1/2 inches thick, which was sufficient to raise three or four tons; and that the crates of goods in the steamboats never exceeded or perhaps amounted to 3000 lbs. weight, and were more generally about 23 cwt. The strap of the crane was also *served* or twined over, as ropes are done in ships, and after it broke, no natural defect or injury from time or the weather could be perceived in it, nor could its breaking be in any way accounted for except by attributing it to pure accident.

It was also shown that Master Burke had frequently travelled on this line before, and had been informed that the proprietors would not be answerable for any injuries done to passengers' baggage or losses which they might sustain.

These were the principal points urged on the part of the defence.

The Court summed up the evidence and commented on it, and advised the jury, in order that the law points involved in this case might be considered hereafter, to find for the plaintiff, on the ground that the defendants were common carriers, and therefore liable for the losses sustained by the plaintiff. The jury would also find a special verdict relative to the question of negligence, and if by possibility they found a verdict on both points, it would probably stand good.

The jury returned a verdict of \$500 damages and 6 cents cost.

And that there had been no negligence on the part of the defendants.

Counsel for the plaintiff, Messrs. Graham—for the defendant, Mr. Anthon.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 327.)

PART II.

Showing the Application of the Living Forces.

Amongst the least informed people, and in remote villages, there are old laws and rules regarding health, sickness, and wounds, which might be thought to come from mere experience; but they are, on the contrary, for the most part, the remains of forgotten theories and opinions, laid down by the learned of former days. Portions of knowledge, it would appear, confined at first to a select part of society, are in the progress of time diffused generally, and may be recognized in the aphorisms of the poor. These are traced to their source only by the curious few, who like to read old books, and to observe how that which is originally right, becomes, through prejudice and ignorance, distorted and fantastical.

If a very little exact knowledge of the structure of our own frames were more generally diffused, charity would be advanced, empirics could hardly maintain their influence, and medical men might have a further motive to desire professional eminence.

Men suppose that the knowledge of their own bodies must be a science locked up from them, because of the language in which it is conveyed; or they take away their thoughts from it, as from the contemplation of danger, unwilling to survey the slight ties by which they hold their lives. They are like persons for the first time at sea, who shudder to calculate how many circumstances must concur to speed the frail vessel on its voyage, and how little is between them and the deep. It is then a mean and timid spirit that shuts out from our contemplation the finest proofs of Divine Providence. Galen's treatise on the uses of the parts of the human body was composed as a hymn to the Creator, and abounds in demonstrations of a Supreme Cause; and when Cicero desires to prove the existence of the Deity from the order and beauty of the universe, he surveys the body of man, deeming nothing more godlike, as marking man's superiority to the brutes, than the privilege of contemplating his own condition, since it teaches him the ways of Providence, from a knowledge of which come piety and all the virtues.

Although we are writing under the title of *Animal Mechanics*, the reader must be aware that we cannot proceed much farther on mechanical principles alone. At least, before we have it in our power to illustrate particular parts of the animal frame by reference to those principles, we must have the proofs before us that we are considering a living body. It is the principle of *life* which distinguishes the studies of the physiologist from the other branches of natural knowledge. To lose sight of this distinction is to tread back the path, and to engage once more in the vain endeavor to explain the phenomena of life on mechanical principles. We have taken mechanics in their application to mechanical structure in the living body, because they give obvious proofs of design, and in a manner that admits of no cavil. Yet, although those proofs are very clear in themselves, they are not so well calculated to warm and exalt our sentiments

as these which we have now to offer, in taking a wider view of the animal economy.

In entering on the second department of this treatise, the reader may be startled at the subjects of discussion, but this comes also from ignorance of their nature. Much may be learned from the observation of things familiar. Their perpetual recurrence banishes reflection respecting them, but it is the business of philosophy to make us alive to the importance of that which we have been accustomed to from childhood, and have therefore long ceased to observe with attention.

In the first chapter of this second part we shall continue to examine the operations of the animal body, independently of the agency of the living property: we shall consider it as a mere hydraulic machine. Following the blood in its circle through cisterns and conduit pipes, we shall point out the application of the principles of this science, as we formerly did those of mechanics, and so arrive at the like conclusions by a different course. And as we before found every muscular fibre adjusted with mechanical precision, so now we shall find every branch of an artery, or of a vein, taking that precise course and direction which the experience of the engineer shows to be necessary in laying the pipes of an engine.

Having thus surveyed the mechanical operations of the animal body, and the course of the fluids conveyed through it, on hydraulic principles, we shall consider ourselves as having advanced through the meaner to the higher objects of inquiry, and proceed to show how the principle of life bestows different endowments on the frame-work; how motion originates in a manner quite different from that produced by mechanical forces; how the sensibilities animate the living properties of action; how the different endowments of life correspond with each other, and exhibit power and design in a degree far superior to any thing that we observed in the mechanical adjustment of the parts or, the circulation of the fluids.

CHAPTER I.

THE CIRCULATION OF THE BLOOD UPON THE PRINCIPLES OF HYDRAULICS.—In tracing the course of the circulation of the blood, it is natural to inquire how far the system of reservoirs, pipes and valves, which form the apparatus for conveying it, are constructed on the principles of hydraulics.

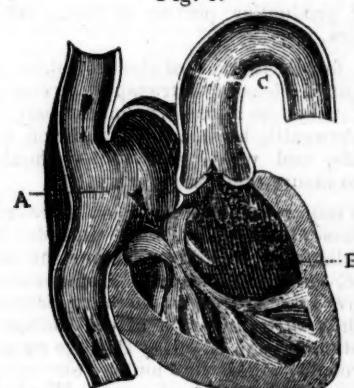
We find this difficulty in the outset, that the vessels containing the blood are not rigid, like those the engineer employs in erecting hydraulic machinery. Instead of resembling pipes which convey water, and which receive the force of gravitation on them, they have both elasticity and an appropriate living power. The artery, the tube which conveys the blood out from the heart to the body, has a property of action in itself. Its elasticity and muscular power must derange those influences which we study in pure hydraulics.

There is to be found, notwithstanding, a great deal that is common to both, when we compare the tubes of an animal body with the hydraulic engine; the capacity of the vessels; the increase or diminution of their calibres; their curves; the direction of their branches—all these ought still to be on the same principles on which experience has taught men to form conduit pipes. We ought not to be indifferent to these proofs of de-

sign, because we acknowledge that an infinitely superior power is brought into operation in the animal body, and which is necessary to the circulation of the blood. It renders the inquiry more difficult, but it does not obscure the inferences drawn from the consideration of the whole subject.

We shall first present to our readers the simplest form of the heart. It is not necessary to detail the more complicated structure of the human heart, where, in fact, two hearts are combined; the fibres of the one continued into the fibres of the other, and the tubes twisting round one another so as to present the form which is familiar to every body. Although there are four intricate cavities, seven tubes conveying the blood into them, and two conveying it out of them, we shall, for the purpose of considering the forces circulating the blood, and comparing the living vessels with pipes, present the heart and vessels as simple; yet with perfect truth, being, in fact, the heart and vessels of animals of more simple structure.

Fig. 1.



The action of the heart is this: the blood returns from the body by veins into the sinus, or auricle,* A, and distends it; this sinus is surrounded with muscular fibres; by the distention or elongation of these fibres they are excited, and the sinus contracts and propels the blood into the ventricle B. The ventricle is, more muscular; it is, in fact a powerful hollow muscle; it is excited by the distention, and contracts and propels the blood into the artery, C.

We understand, then, that every heart must, at least, consist of two cavities alternating in their action; that the vessel which carries the blood to them is called a vein; and that the vessel which carries the blood out from them is the artery.

The first thing that strikes a person examining the heart is the extraordinary intricacy of the cavities, from the interlacing of its muscular fibres, and he naturally says that they appear ill calculated for conveying a fluid through them. There is an attraction between fluids and solids, he might observe, and this attraction is increased by the extension of the surfaces of the pillars and cords which he sees in the interior of the heart.

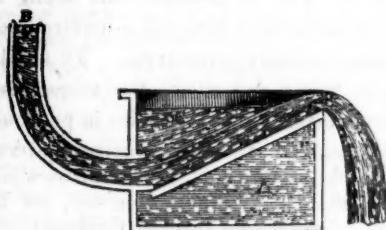
We must remind him that the blood is coming back from the body, having performed very different offices, in different parts, and has parted with different properties in the several organs it has supplied. There is, in that stream of blood which enters through the vein, a new supply of fluid,

* Auricle, from *auricula*, the flap of the ear, is a name given to the sinus, because a corner of it hangs over like a dog's ear.

which has come by digestion, the material for making fresh blood, as well as that which has run the circle. These two fluids must be thoroughly mixed together, and no doubt this is one of the offices provided for by the intricacy of the interior of the heart.

Again, looking to the recesses of the cavities formed between the fleshy columns, and behind the valves, we might suppose that the blood would remain there stagnant. There are cavities, or recesses, too, in the remote parts of the circulating vessels, where we might suspect that the influence of the stream would not be felt, and a stagnation might take place. But there is attraction between the particles of fluids, as well as between the fluids and their containing tubes. Let us see then how, in this figure, a stream of

Fig. 2.



water, carried through a cistern of water, will, by its friction, draw after it the water in the cistern, and carry it above its natural level, and over the side of the vessel.

The stream entering the reservoir, A, by the pipe, B, carries with it all the water, C, which stands above the level of its upper surface. By this we see that the stream of blood entering into the heart, even if its cavities were not emptied at each impulse, as some contend they are, would draw out the blood from its recesses, so that no part could remain stagnant, but, on the contrary, all would be carried in eddies round the irregularities, until they took the direction of the great artery, in which they would be perfectly combined.

The next thing to be noticed partakes of the nature of a mechanical provision—we mean the action of the valves.

We must here remark, that the opening into the ventricle is very different from that which leads out of it, the latter being much smaller. Medical writers describe this as if it were nothing to them, and a mere accident. But it must be recollected that a stream of water entering a reservoir is in a very different condition from that which is going out of it; it is on this principle that the mouths (*ostia* is the anatomical term) of the ventricle are differently formed, and it is this difference which makes the structure of the valves which guard those passages so dissimilar and so appropriate. Without attention to this we should follow our medical authorities, and call this variety in the mechanical adaptation a mere playfulness in nature. It is more agreeable to us to see a precision of design visible at the first step of this inquiry.

The valves of the heart are regular flood-gates, which close the openings against the retrograde motions of the blood. They are not all of the same mechanical construction, and their difference deserves the reader's attention as proving design in this hydraulic machinery.

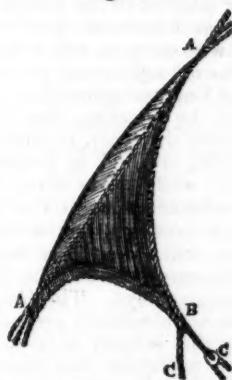
The valve which we have first to describe closes the opening betwixt the auricle, or sinus, and the ventricle, and prevents the

action of the ventricle propelling the blood back again into the auricle.

It is a web, or membrane, resembling a sail when bagged by the wind. The blood catches the margin of this membrane, and distends it as the wind does the stay-sail, or gib, of a vessel, which it much resembles, being triangular and pointed. There are three of these membranes, and the valve is called *tricuspid*, or three-pointed. Three membranes, then, of this kind, combining and being floated back upon the mouth of the opening, effectually close it.

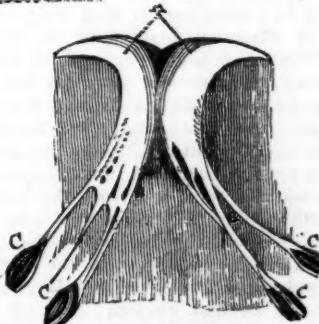
The illustration of the action of these valves by a sail is so perfect, that if the reader will have patience to attend to those little contrivances which the mariner finds necessary for strengthening his canvass, and giving to it the full influence of the wind, he will have an accurate idea of the adjustment of these floating valves.

Fig. 3.



To carry on the comparison: one edge of the stay-sail is extended upon the stay, A, and tied to it by *hanks*. The edges of the sails, called the *leeches*, have a *bolt-rope* run along them; and on the edge where it is attached, the canvass is strengthened by being hemmed down or *tailed*. In the same way as the foot of the sail, or lower margin, is strengthened with the *bolt-rope*, just so are the valves strengthened at their edges and their corners. Where the two ropes join in the loose corner of the sail, they form a *clue*—a loop to which *tackle* is attached; the valve has such a corner so strengthened, and has a *cord* attached. The corners of the sail are strengthened by additional portions of canvass called *patches*; so are the valves strengthened where their tendons are

Fig. 4.



infixed. To the corner or *clue*, B, ropes are attached which are called the *sheets*, C. These being drawn tight, spread out the foot of the sail to one side or the other, according to the direction of the wind, and the tack the ship is on; the valves have also their *tackle*; and, in short, we shall find a resemblance to all the parts of a sail in the valves of the heart.

One edge of the triangular valve is tied to the margin of the opening, as one of the leeches of the sail is attached to the stay; the opposite corner is loose, and floats, as the sail does in tacking, until the blood, bearing against it as the wind bears against the sail, bags and distends it; the corner is then held down by tendons, for there are cords attached to the corner of the valve, as well as to the corner of the sail. These the anatomists call *cordae tendineae*, B B, which in their office have an exact resemblance to the ropes called the sheets of the sail. They are delicate tendons attached to the margin of the valve, and they prevent the margin from being carried back into the auricle.

INDIAN RUBBER WATER-PROOF.—This substance is every day becoming of increasing importance. For harness and various other farming and domestic purposes, it will at no distant day be used. The following is from the Ohio State Journal:

Having heard much said of late in favor of Jewitt's water-proof, as rendering leather perfectly tight, I witnessed an experiment on Saturday last, showing the improvement of the leather as to its durability; and were there not a number of the most respectable citizens present, I should hesitate to state the fact and publish it to the world. Two pieces of leather, of equal thickness, were tried upon a grindstone, under a pressure of a weight of 12 lbs. In the first place, the leather in its natural state was placed upon the stone, which was revolved 1500 times; then the piece saturated underwent the same operation 3000 times; and when compared, it was found not to be so much worn as the leather in its original state. From the test made, I have no hesitation in giving it as my opinion, that leather thus prepared will last twice as long as that in its original state. When it is considered that in addition to its rendering leather perfectly impervious to water, it adds 100 per cent. to the wear, its value to the American people is almost incalculable.

P. H. OLMS TED.

Columbus, March 18, 1834.

From the Eclectic Journal we extract the following:

In our former notices of this valuable article, we omitted mentioning particularly its beneficial applicability to all kinds of leather harness. It could not fail to have been observed by every individual who has had the opportunity, that those parts of harness composed of leather are, in general, injured infinitely more by wetting and drying, both by rain and sweating of the horse, than by friction or actual wear. By wetting and drying, the leather becomes hard and unpliant, in which condition it cracks and breaks. But let the harness be saturated with the water-proof, and neither water nor sweat can penetrate it, and the leather must remain as soft and pliable after exposure to wet as before. This will certainly render the harness more durable, as well as less liable to chafe or gall the horse.

In conclusion, we will repeat the suggestions of Col. Jewitt, that his composition will be equally as applicable to wood as leather, and by excluding the water from its pores, vastly increase its durability. If future experiment confirms this suggestion, as we have strong reason to hope it will, the advantages which hydraulics, and particularly the shipping interest, will receive from this discovery, will be incalculable.

THE CHINESE WALL.—According to a statement in the "Morgenblatt," the celebrated Chinese wall was erected 213 years before the birth of Christ, against the Mongolians. It is 714 German miles long, 14 feet thick, and 26 feet high; so that with the same materials, a wall, one foot in thickness and 23 in height, might be carried twice round the whole world.

YEARS.—The word Year is purely Saxon, and is supposed by some to be derived from *era*: whilst others deduce both words from the Greek *ear*, or Latin *ver* (Spring); because many of the ancients were in the habit of dating the commencement of the year from spring. In the Hebrew, Greek, and Latin languages, the word *year* is expressive of a ring or *circle*. The Egyptians also represented it by a snake placed in a *circular* position, with its tail in its mouth; whence, perhaps the name of the *Zodiac*, or that *imaginary* circle which is made by the sun in the heavens, during the twelve months. The time in which the sun performs its journey through the twelve *signs* of the *Zodiac* comprehends 365 days, 5 hours, 48 minutes, and 48 seconds, and is therefore styled the Natural, Solar, or Tropical Year. The *Sidereal*, or *Astral* year, is the time which elapses from the sun's passage from any particular fixed star, until its return to it again, and is just twenty minutes and twenty-nine seconds longer than the natural or solar year. The *Lunar* year consists of twelve *lunar* months, or that period during which the moon passes twelve times through its various phases, or changes. The common or civil year, in use with us and established by law, contains 365 days during *three successive years*, but in each *fourth year* an *intercalary* or additional day is inserted, in order to make up the number 366, such additional day being considered equivalent to the time lost by not counting the five hours and forty-nine minutes at the end of each of the four years, from one *Bissextile* or *Leap year* to another. The word *leap* sufficiently explains the act of passing over the hours in question. This plan was invented by Julius Cæsar, or by Sosigenes, the Egyptian mathematician, who assisted him in rectifying the *Calendar*. The additional or *intercalary* day is with us always placed in the month of February, which consequently in *Leap Year* consists of twenty-nine days, the usual number being twenty-eight. Cæsar placed it in the month of March, by reckoning the sixth day of the calends of that month *twice over*, hence the term *Bissextile*, from the words *bis* (twice) and *sex* (six), or *sextis* (sixth day). But by the Gregorian alteration, the fourth year coming at the close of a century is not a leap year, unless the number of hundreds be a multiple of four. Thus 1600 was a leap year, 1700 and 1800 were not, 2000 will be. The reckoning of time by the course of the sun or moon was attempted in various ways by different ancient nations; but they, finding that their minor divisions of time did not correspond with the courses in question, endeavored to prevent confusion by ordaining a certain number of days to be *intercalated*, or inserted, out of the common order, so as to preserve the equation of time. The *Egyptian* year (as used by Ptolemy) consisted of 365 days, which were divided into twelve months of thirty days each, besides five *intercalary* days at the end. The *Egyptian* *Canicular*, or *natural* year, was computed from one *heliacal* rising of the star Sirius, or *Canicula*, to the next. By the regulation of Solon, the ancient *Greek* year was *lunar*, and consisted of twelve months; each containing thirty and twenty-nine days, alternately; and, in every revolution of nineteen years, the third, fifth, eighth, eleventh, sixteenth, and nineteenth, it had an *intercalary* month, in order to keep the New and Full Moons to the same seasons of the year. The ancient *Jewish* year was the same as the *Greek* one, only that it was made to agree with the *Solar* year by adding eleven and sometimes twelve days at the end; or an *intercalary* month when necessary. The modern *Jewish* year consists of twelve *lunar* months generally; but sometimes of thirteen, that is, when an *intercalary* month is inserted. The *Turkish* year consists of twelve *lunar* months of thirty and twenty-nine days alternately, sometimes of thirteen. The ancient *Roman* year, as settled by Romulus, was *lunar*, but contained only ten months, which were irregular, and comprehended 304 days in all; being a number fifty

days short of the true *lunar* year, and sixty-one days of the *solar*. Romulus added the requisite number of days at the end of the year. Numa Pompilius added two months, making the year to consist of 355 days, thereby exceeding the *lunar* year by one day, but being short of the *solar* one by ten days. Julius Cæsar, during his third consulship, and whilst he was *Pontifex Maximus*, or high priest of Rome, reformed the calendar by regulating the months according to their present measure, and adding an *intercalary* day every fourth year to the month of February; but he being assassinated before his plan could be fully brought into operation, the Emperor Augustus perfected and established what his kinsman had begun. The *Julian* year, which consisted of 365 days and 6 hours, was, however, still incorrect; for it was found to be too long by about 11 minutes, which in 131 years would be equal to one day; consequently, there was a further reformation of the calendar by Pope Gregory, in the 1582. He cut off eleven days, by calling the fourth of October the fifteenth. This alteration of the *style* was gradually adopted in the several countries of the European continent; but in Russia, in some of the Swiss cantons, and in the countries of the East, the *old style* is still preserved. The Parliament of England adopted the *Gregorian* plan, in 1752, by enacting that eleven days should be *omitted* that year, all dates therefore, previous to 1752, are said to be according to the *Old Style*: whilst those since that period are deemed to be according to the *New Style*. In 1800, which was properly a *bissextile*, or *leap year*, the *intercalary* day was omitted; hence the difference between the old and new style is now twelve days. The *Gregorian* regulation does not absolutely preclude all error in future; but that is likely to be so trifling, as not to require particular attention. The beginning of the year has by no means been the same in different ages and countries. The Chaldeans, the Egyptians, and the Jews, in all civil affairs, began it at the *autumnal equinox*. The ecclesiastical year among the Jews, the common year of the Persians, and of the Romans under Romulus, commenced in spring: a mode still followed in many of the Italian states. Both the *equinoxes*, as well as the *summer solstice*, were each the commencing date in some of the states of Greece. The *Roman* year, from the time of Numa, began on the calends of January; the Arabs and Turks compute from the 16th of July; the *christian* clergy formerly commenced the year on the 25th of March*—a method observed in Great Britain, generally, in civil affairs, until 1752; from which period our civil year has begun on the 1st of January, except in some few cases, in which it still commences on the "Day of Annunciation," or the 25th of March. In Scotland, the year was, by a proclamation, bearing date so early as the 27th of November, 1599, ordered thenceforth to commence in that kingdom on the 1st of January, instead of the 25th of March. The *English* Church, still, in her solemn service, renews the year on the *First Sunday in Advent*, which is always that next to or on *St. Andrew's Day*. Our ancestors, after the establishment of Christianity, usually began their year at *Christmas*, and reckoned the commencement of their *era* from the incarnation, or birth of Christ. William the Conqueror, however, introduced the method of substituting the first year of his own reign for the Christian era. At subsequent periods, the *English* reverted to the ancient custom; but all State proclamations, patents, charters, and acts of Parliament, have continued to be dated from the commencement of the reigns of the respective sovereigns, with the addition of the words, "and in the year of our Lord," &c. The *Russian* government did not adopt the Christian era until the time of Peter, in 1725; their previous practice had been to reckon from the world's age, or the *year of the creation*.

CREAM OF TARTAR, rubbed upon soiled white kid gloves, cleanses them very much.

AGRICULTURE, &c.

[From the New-York Farmer.]
Cultivation of Grape Vines in Pots. By the
EDITOR.

Very considerable attention is now being paid, by gardeners in England, to the cultivation of the vine in pots. In some instances the long cuttings from large vines are curled around the inside of the pot, leaving above the soil but one or two eyes, which, in consequence of the numerous roots that are made, speedily obtain a vigorous growth. By giving the vines a circular training, they will become quite ornamental, and take up but comparatively little space. By putting the pot containing the vine in another, and filling the space between them with soil, a uniform moisture may be easily preserved. To families living in towns and cities, the subject is of much importance; to the ladies in particular we recommend it. Mr. Mearns, gardener to the Duke of Portland, thus expresses himself in the Horticultural Register, on this method of cultivating them in England:

"By my method I shall introduce vines into any farmer's garden in the kingdom, where none had previously been; and at the expense of little besides ten or twelve lights of glass will insure him from 500 to 1000 fine bunches of good grapes the first season! If any one can boast the same, the fact has never been laid before the public, else it is likely I should have seen it. I go thus far, on purpose to raise a curiosity, and to excite every degree of emulation, knowing, that if such can be excited, the system will very soon discover itself to be most important to the country. The successful cultivation of the grape is certainly one of the simplest branches of the art, both in pots and in borders; if a vine be left entirely to itself it will soon become *fructiferous*, after having been for years under the most rigid discipline to little purpose. A vine, excited to a high degree of luxuriance, is neither the most fruitful nor produces the finest or best grapes. I have seen Hamburgs, from three to six and eight pounds weight each bunch! The vines comparatively *weak*, and vine border very shallow, and by no means rich!

"As curiosity will be created by such a remark, I beg to state that such grapes were repeatedly produced by a Mr. Minnett, formerly gardener to Mrs. Powes, Berwick House, near Shrewsbury.

"I have there seen bunches of Hamburgs from fifteen to sixteen inches long, and from eight to ten inches across the shoulders; the berries all of a perfect black, as close as they could grow together, and the size of a boy's large marbles.

"I have coiled into pots this season upwards of a hundred branches; forty and more of which I have got into action. I shall continue to introduce others till the middle of June; if I can starve them into dormancy by cold bleak exposure, or by burying them in clay-cold murkey graves or caves! or by being sunk under a wall on a north aspect. I am begging of all my friends the long branches which they cut out in pruning, and as far as Somersetshire, Worcestershire, Staffordshire, &c. &c., so that I expect, in a short time, to have a stock of plants sufficient to produce 1000 bunches the first season."

"Put in your cuttings of young wood, in coils of three, four, to five feet, blinding all the eyes, except the two uppermost. I choose to leave two eyes till the finest gets the lead, and is safe, for fear of accident to one alone; I then slip the weakest off. If placed into a bottom heat, and the eyes be buried about an inch or two in the pots, in the course of coiling, by the time the best eye appears above the soil, as strong as the bud of a fine asparagus! the whole coils beneath will be completely occupied with young active roots; and by the time the shoots are four feet long, the pot will be a perfect mat of those eager feeders. Then shift and top the shoot and never leave on any laterals; plunge as before into a fine bottom heat and encourage the main topmost eye alone to push; and lead it on, but without laterals, till it is again four feet long; when, if the pot is full of roots, shift, top it as before, and encourage again the uppermost eye only to start; and by the time it is another four feet, if not over-potted before, it will require a third shifting. If required, you may stop at every four feet, five or six times; but three shifting will be found enough for the season; and you had best not suffer it to reach above from twelve to twenty feet of clear bearing wood. At the end of the season you will have shoots one inch and a half diameter, and with fine bold eyes, and full of fine set bunches for the next season!"

"You will readily perceive, that, by such an early and abundant accumulation of young vigorous roots, and by such a top and bottom management, it is no extraordinary miracle to have every cutting a fruit bearing shoot at one season's growth; and by a proportional coil of large older wood, it will be equally obvious to you how readily such will produce a fine crop the first season!"

"The extraordinary progress of my grapes upon the coiled vines, placed in a bottom heat, astonishes every one. In another season, when I have got my wood early ripened, I intend to start some in October, and to have plenty of fine ripe grapes by the middle of February. I have some at this time half grown, the branch being only cut from the vine, and placed in bottom heat 20th of November! 'Can such things be!' Yes, easily and simply so. I intend to keep some coilers as late as the middle or end of July, before they are excited, and then to place them in a bottom heat. The fruit, by doing so, will be perfectly ripe before the dull weather of autumn sets in, but not so with the wood; by which circumstance they will retain the leaves vigorously through the winter, and consequently the fruit will retain its plumpness till April or May!"

"You will now say this is going too far, but it undoubtedly may be done. New ripe grapes in February, and plenty of old grapes till the end of June! There is little beyond the power of man, if he will but exert those faculties with which God has endowed him."

Uses and Cultivation of the Pie Plant or Rhubarb. By D. F. AMES. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET,—America is blest with a favorable climate, and peopled by natives from all parts of the earth, who variously cultivate our various soil; and yet our markets are not so well supplied with fruit and vegetables as those of less favored lands. This arises, in part, from the very limited demand for any thing out of the common way. Animal food

is of a more heating and irritable nature than vegetable; consequently less adapted for our summer season. Indeed, at any time, the wholesomeness as well as luxuriance of our table is greatly magnified by these salutary additions. Among their number, I wish to call the attention of your readers to the Turkish rhubarb, *rheum rhabonticum*. This is a valuable plant, and only requires to be known to receive general cultivation; it has the important recommendation of presenting itself for the table, when few others for a similar purpose are to be had. The petioles or stems of its large fan-like leaf are the part to be prepared. When the leaf is fully expanded, cut it close to the main stem, remove the green top, then deprive the stalk of its outer skin by stripping it down, and not by cutting with a knife; then cut it in small lumps, not too thin, and either boil it in dumplings made of short paste, or bake it in tarts, using sugar, lemon, &c., to the taste. It is found greatly to improve the flavor of apple tarts or pies, by mixing it in the proportion of one-third to two-thirds of apples. The latter fruit having been kept through the winter generally loses its flavor, and becomes flat and insipid. But the good housewife will soon find a variety of ways to cook this delightful plant. I shall only add that it has the reputation of being very serviceable in aiding the discharge of bile, and conclude with a few remarks on its culture. The medical rhubarb is principally brought from the mountains of Tartary, and is the dried root of this plant. It grows there in great abundance upon the declivities of the mountains, preferring a light sandy soil, on the south side, but in the shade; therefore procure a place in a warm shady border of your garden, loosen the earth, *far and deep*, enrich the spot with some rich light soil, and place the root upon a small quantity of old stable manure, so that its top, before any leaves have started, be six inches below the surface; over the crown of the root, strew a little more manure and cover it with fine mould. In the spring, when the leaves begin to appear above ground, draw the earth round them, and when the stem of the leaf has attained the length of six or eight inches, they may be cut for use. The main stem will attain the height of six or eight feet. The root for planting may be obtained at the seed stores and nurseries.

As early as February or March, some growers of this plant put barrels or large boxes over the plants, and cover the whole with heating manure. Thus treated, they will grow very rapidly. Others let them stand in open warm situations, taking no other pains than keeping the ground free from weeds, and cut the leaves as wanted. They are propagated by separating the suckers or roots from the main stem. In a few years one plant will make a dozen or more.

D. F. AMES.

Washing and Shearing Sheep.—When we wash sheep in warm weather to cleanse their wool it does not injure them, but if cold, it does, and sometimes introduces the rot.

Washing common sheep's wool on their backs is the best method to prepare it for carding, that I have observed, if it is well done; and the best way to do this is to put the sheep in clean running water (to the number of 50 or 60) before we commence washing; this soaks, and dissolves the dirt in the wool, so that even merino wool is made much cleaner. (This we discovered by a merino sheep jumping out of a boat and going to shore, and when we washed it, the wool that had been

wet was considerably cleaner.) Then carefully wash them the common way.

Wool is much better, when shorn early, both for carding and wearing.

I have shorn my sheep from the 1st of 5th mo. (May,) to the 6th mo. (June,) and by several years' experience in carding wool, have found that the earlier wool is shorn the better it works in carding, even merino as well as common wool; because it is more elastic, and softer: but when wool is shorn late in the season, it becomes dead and harsh, and is subject, when carded, to nap: so that early shearing, keeping sheep in good order, and washing wool suitably, are material objects.

According to my observation, about the latter end of April and the first week in May is mostly warm dry weather; that if sheep were shorn about this time, their wool would card, and wear much better than when shorn late; and they do as well with me as when their wool was taken off late, having a suitable shelter.

The best method that I have observed of washing common wool after shearing is to put 8 or 10 lbs. in a tub of cold, soft water; let it soak 30 or 40 minutes, then rub it slightly and rinse it out; fill the tub with fresh wool as before, in the same water, and when thus done, rinse it in clean water, and shake it out loose for drying. Warm water takes the grease too clean out of common wool for carding; and it makes it harsh, and is more or less subject to be fulled; soaking the wool dissolves the dirt, and this is all we want out of common wool; to rub it slightly, for wool may be fulled by rubbing it much, and wool should not be fulled, for that will cause it to nap in carding; to shake it out loose, for wool made loose and unconnected cards the best; it is best not to empty the water until done washing, because the oftener we wash in the same water the cleaner wool will be; for the grease in wool acts like soap, in cleansing it; on this account it is preferable to wash the locks first, before we wash that which is for more particular use.

Wool ought to be taken in before rain, for that injures it, by connecting, or interlocking the fibres; it also makes it harsh and compact.—[Ohio Aurora.]

CULTIVATION OF GARDEN SEEDS.—Without great care in raising seeds, many kinds of garden plants will deteriorate or become of mixed varieties. It is not only necessary to make an early selection of the very best plants for seed, but those growing under all the circumstances likely to produce the desirable properties. If planted near each other, particularly if they flower at the same time, they are sure to mix, and, in nine instances out of ten, produce inferior plants. Among the vegetables liable to hybridise are the brassica family, including cauliflowers, broccoli, cabbage, turnips, &c., and different kinds of peas, beans, cucumbers, beets, onions, lettuce, and corn. The latter, in particular, will, by the aid of strong winds, mix at a great distance. Those who grow seed for sale cannot be too careful.

QUICK SILVER IN TREES.—On reading the following paragraph, in the *Genesee Farmer*, the thought occurred to us that the infusion of mineral or vegetable preparations into the circulation of the sap of peach trees, infected with the yellows, might be attended with good effects.

"Mr. Garrigues states that a plum tree in his vicinity, which had for several years dropped all its fruit prematurely, had, since a hole had been bored into it, and a quantity of quick silver deposited therein, ripened its fruit, which had been so abundant as more than to supply the family of the owner."

NEW-YORK AMERICAN.

MAY 31—JUNE 6, 1834.

LITERARY NOTICES.

No. XXVI.

Peoria, Illinois, March.

I have gone through a variety of amusing and some vexatious adventures in crossing the country from Galena to this central place; but you have now been with me so long upon the prairies that I shall not fatigue you by detailing more of a traveller's passing mishaps and petty encounters. The great melting of the snows that detained me at Galena, was followed by a sharp frost, which, crusting over the swollen streams, made their passage very painful for the horses. In passing through the Winnebago swamp, we drove for the distance of a mile through water up to the chests of our horses, and so heavily coated with ice, that it was as much as the leaders could do to break a way with their fore feet. My fellow traveller, however, for I started with but one from Galena, proved to be an old campaigner and capital travelling companion, and we managed to extract some amusement from every occurrence, however annoying; and whether we were jolting over the frozen ground in an open wagon without springs or seats, or keeping the freezing night-wind away by stuffing our bed clothes in the crevices, as we shared a pallet together in some half-constructed log edifice, the spirit of fun and good humor has been sympathetic between us.

About a day's journey from Galena, we passed over a reach of prairie, some 12 or 14 miles in extent, where my companion, who is a middle-aged man, was fortunate enough, a few winters ago, to be the cause of saving a great many lives. A train of sleighs, holding more than a dozen people, among whom were several females, started immediately after breakfast to cross this narrow arm of the prairie; and though the distance was only as I have stated it, they contrived somehow to lose their way in the snow, and night closing in found them apparently as far from the house they were seeking, as when they started in the morning. They had, in fact, during a sudden flurry of snow, turned completely round, and, as my companion was the first to discover, were actually going backwards instead of advancing on their route. A council was at once held, and all except my friend were for still pushing forward, though the horses were worn down with fatigue, and several of the travellers already frost bitten or becoming torpid with cold. But my companion, who probably had more experience in such scenes than any of the company, immediately took command and ordered a halt, declaring that he would not move a step further, and warning them that they would perish should they not make use of the few moments of light that were left them to secure themselves for the night. Providentially every one yielded to him. The horses were turned loose, and the snow having been removed from a large space of ground, it was forthwith covered with buffalo skins, and the largest sleigh in the train placed inverted upon them. The whole company then, with the exception of my friend, crawled beneath the impending structure, while he remained outside and covered up the box with snow, shovelling it on with a piece of board. This exercise—which alone saved his life, while it ensured the safety of theirs—he continued till morning, when some of the horses having found their way into the settlements, the people came out and led the company to their homes. During the same spell of weather, if not on the same night, two waggoners and some oxen were frozen on the prairie, farther down the country, on a route which I have since passed. There were three of them in company, each with a team, halting* goods to some point on the Illinois. Finding their oxen gradually becoming stiff with cold, they determined to leave them and hurry on to a house. One of the three gave out before they had gone many miles, and his companions buried him in a snow bank; the second sank down on the road; and the third only succeeded in reaching a house and saving his life.—Part of the load of these poor fellows consisted

* Pronounced *hauling*: a term universally used at the West instead of its northern synonyme "drawing." They have Shakespeare's authority for it—"I think oxen and wain ropes cannot *haile* them together."—TWELFTH NIGHT.

of blankets, which, had they known, it might have saved them. The incident struck me when told near the spot on a cold day, though not so much as a similar story which I heard when I first came upon the grand prairie in Indiana. It related to the fate of an emigrant who attempted to cross a broad arm of the prairie with his family, in an open wagon, on a very cold day. They were found stiff in the road, the horses frozen in their traces, and standing upright, as if petrified by some sudden influence, and the man leaning against the wagon, with a fragment torn from it in his hands, as if in the act of trying to make a fire. The mother sat upright, with an infant in her arms, but the children were curled about her feet in every position that an attempt to screen themselves from the cruel exposure could suggest. But these stories, of which I could tell you a hundred, begin now to lose their effect, as, with the gradual opening of spring I find myself approaching a milder region. The last day's travel has led along those sunny bottoms of the Illinois, where, even at this early season, the chattering of the paroquet may be heard upon every side; and here and there I have delighted to observe a tender green stealing over those sheltered meadows beneath the retreating banks of the river, whose narrow limits and basin-like appearance answer so completely to my preconceived ideas of a prairie. The Illinois about 30 miles above this point expands into a fine lake, upon the banks of which Peoria is situated. The site is one of the prettiest for a town that I ever saw, and the approach to it, through alternate prairies and richly wooded bottoms, that fringe the lake with a vegetation of stupendous growth, and give glimpses of its sparkling waters and blue islets through festoons of vines that overhang the road for miles continuously, must in summer be like a scene of fairy land.

Peoria is about the geographical centre of Illinois, though by no means as yet the centre of population, which is still far to the southeast. This place is rapidly improving, and may very possibly become the future seat of Government. It has inexhaustible quantities of bituminous coal in its vicinity and commands an unbroken steamboat navigation with St. Louis. The adjacent country is very fertile. The soil, like that of Illinois generally, is better suited to the grazier than the agriculturist. It is composed of a black and rich mould, with a small admixture of fine silicious sand, and rests on soft and permeable clay without being interspersed with stone or gravel.—This formation, as is observed by Governor Coles in an excellent address before a scientific body in Illinois, whilst it is unfavorable to the existence of perennial streams and fountains, and impedes the plough of the agriculturist, and endangers his health by the creation of miasma, in the vicinity of the middle lands furnishes inexhaustible meadows to the grazier, and every facility for canals and railroads. The Illinois river was described by Gen. G. B. Clark so long ago as 1777, as "a natural canal passing through natural meadows;" and the facility with which branches might be made as the country requires them, is now very apparent. The route of the proposed canal (of which I have before spoken) to connect the waters of Lake Superior with those of the Gulf of Mexico, by a communication of only one hundred miles, commences at a point on the Chicago river, five miles above its mouth, where the water is 12 feet deep, and on a level with Lake Michigan: thence seven miles and a half to the summit level, which is 17 feet above the surface of lake Michigan, and five feet nine inches above the Deplaine: thence (for a ship canal,) down the valley of the Deplaine and Illinois, about 90 miles, with 175 feet descent to the mouth of the little Vermillion, four miles below the rapids of the Illinois river; at which point that stream is navigable for steamboats at all seasons.

Ten years, and \$40,000 have now been spent upon this work, and not a shovelful of earth, so far as I can learn, is yet removed from the soil. Let the New York merchants step in and make it, and the warehouses of Buffalo will be to St. Louis what those of New Orleans are at present. New York will have the whole trade of the Mississippi valley, and the vast regions of the Missouri will be tributary to her market. A canal boat that can navigate the lakes may then clear at Coenties slip and discharge her cargo at a trading post on the Yellow Stone. Such a canal would be to this Union what a cut through the Isthmus of Darien would be to the world. The one would draw St. Louis as near to New York as the other would India to Europe. It would be well indeed that Government should make it; but the means required are so slight in comparison with those invested in a hundred similar works

in different parts of the country, as to bring it easily within the limits of individual enterprise. The State of Illinois, judging from the progress already made, will not complete the canal for half a century to come. The want of capital is here so great as almost to seal up each outlet for enterprise, though they present themselves on every side; and our eastern capitalists are so completely ignorant of the prodigious resources of this region, that it may be long before the defect is supplied. Were the people in our rich eastern cities more familiar with even the geographical relations of this extraordinary region, I am convinced that more than one company would be formed, that would be eager to purchase from the State of Illinois, at a handsome premium, the right of making the canal and holding it in joint stock for term of years. When people of capital and enterprise open their eyes to this matter, the work will be accomplished in three seasons, and as you may then take a steamboat at Buffalo and check a berth for St. Peters, a trip to the Falls of St. Anthony will soon be thought no more of, than is now an excursion to Niagara. Fishing parties will be made up at Islip for lake Pepin; and Hewitt will furnish port folios to tourists that wander away to sketch the awful scenery of the (now) remote "THUNDER'S NEST." while "the Tetons of the burnt wood" will supply Jennings's larder with game, and Paulding's best Madeira be drunk by gentlemen that shoot elk among the Dacotahs.

St. Louis, March, 1834.

Here I am, safely at last in the renowned city of San Louis. Our route from Peoria, by the way of the flourishing towns of Springfield, Jacksonville, and Alton, through the small meadow-like and half cultivated prairies of Lower Illinois, was very agreeable; and in crossing one prairie of considerable extent, I had the pleasure of seeing it on fire on every side around me. The hour was near midnight, and the spectacle was magnificent beyond description. An illustration by Westall's pencil of The Rich Man in the Burning Lake, which I have seen somewhere, would give as near an idea of the scene as the painter's art could convey. In one place the prairie presented exactly the appearance of a broad burning pool, in others the flames swelled up like seas of fire, rolling the liquid element in solid columns over the land; and then, like the waves of the sea itself, when they break upon the shore, a thousand forked tongues of flame would project themselves far beyond the broken mass, and greedily lick up the dry aliment that lay before them. Our horses did not seem to mind the phenomenon at all, and we drove so near to the fire as to feel the heat very sensibly. But though we probably incurred no danger, it was almost startling at times to see a wall of fire as high as our horses' ears, in some places stretching along the roadside, while the flames would shoot to the height of twenty feet or more, when a gust of wind would sweep the prairie.

We had an accession of four or five passengers at Jacksonville, and I was not a little amused to find that out of six persons in the stage, we had four *colonels*; and when we chanced to stop at a tavern, where I saw a cartridge box and a musket, over the mantelpiece, I could not help remarking aloud, that it was the first symptom of the existence of a private, I had seen in the country. Some of the colonels looked a little sour, and the jest might not have passed off as easily as I could have wished it, had not my friend, who was also a colonel, entered my name on the tavern register by the same distinguished title, which, I presume, qualified me to speak a little *ad libitum* of militia deeds of arms.

The population seen in the last few days, seemed to be of a very mixed character: some were quakers, from Pennsylvania, and they had every necessary and comfort of life; others again, were miserable looking creatures, from North Carolina and parts of Tennessee, who lived with scarcely any labor, and kept blanket suspended over their porch instead of a door—in log huts, that had been built for several seasons. At Alton, again I saw in their neat white houses, with their green venetian blinds—their tasteful piazzas and pretty enclosures, with newly planted shrubbery—sure indications of a New England population. The same, or even greater marks of improvement and superiority in their style of living, over the mass of emigrants hither, are manifest, I am told, wherever the English have established themselves in

* A young officer of the first Infantry, who commanded an exploring party into this savage region, so called by the Indians, arrived from his tour while I was at Prairie du Chien. He described the scenery as possessing a desolate grandeur which words could not paint.

Illinois. I have missed all their settlements, by passing to the westward of them. But both here and in Michigan, I have always heard the English residents spoken of with respect and affection.

A few miles below Alton, on the Mississippi, I passed a deserted village, the whole population of which had been destroyed by the "Milk sickness." The hamlet consisted of a couple of mills and a number of frame houses, not one of which were now tenanted; but the dried weeds of last year choked the threshhold of the latter, and the raceways of the mills were cumbered up with floating timber, while the green slime of two summers hung heavy upon their motionless wheels. Not an object but ourselves moved through the silent town; and the very crows themselves seemed to make a circuit around the fated place when they came in view of the thickly-sown burial ground on the skirts of the deserted village.

We were now on the famous "American bottom," and I was really astonished at the prodigious size of the trees, and the magnificent vegetation which this region displays, but the scattered inhabitants looked far from healthy. At Alton we struck the Mississippi, and a few miles below we passed the mouth of the Missouri, where its white and turbid current could be seen rushing in among the Islands and staining the limpid tide of the Father of rivers far down the western shore, while for twenty miles below that clear stream still preserved its purity on the eastern side. Surely Father Hennepin was mistaken, when he called the streams above and below the Missouri by the same name! For the Upper Mississippi, except in its breadth and volume of water, bears but little resemblance to the Lower river; while the Missouri, as it tears through its muddy banks to drink that beautiful tide, soon gives its own turbulent character to the whole stream below, and even impresses its peculiar features upon the gulf in which it at last loses itself.

It was too late in the evening to cross when we arrived opposite to St. Louis, and I amused myself before retiring for the night, in listening to the sound of the church bells—the first I had heard in many a month—and watching the lights as they danced along the lines of the dusky city, and were reflected in the dark rolling river. We crossed in time for breakfast, and I am now tolerably established at the best hotel in the place.

H.

THE WORKS OF MRS. SHERWOOD.—New York.—HARPER & BROTHERS.—Vol. 1.—Comprising the history of Henry Milner, a little boy, who was not brought up according to the fashions of this world.

The deserved success which attended the publication of a uniform edition of Miss Edgeworth's works; now so recently completed by her last admirable, every way admirable tale of *Helen*, has induced, we may presume, the same enterprising publishers to undertake a similar edition of the works of Mrs. Sherwood; devoted like those of Miss Edgeworth, to the improvement of her fellow creatures—tho' by the more immediate and direct intervention of religion.

Miss Edgeworth, without omitting the occasional introduction of religious sanctions to enforce moral precepts, mainly relies on the present and immediate advantage and happiness which flow from an observance of, and strict adherence to, truth and duty.

Mrs. Sherwood, on the other hand, constantly presents obedience to the will of God as the rule of action, which, from its superior sanctity and obligation, supersedes any appeal to, or reliance on, less exalted motives of action.

Together, these two writers—dissimilar in quality and yet both of great ability—have furnished materials of rare excellence for conducting moral and religious education.

Henry Milner has never before been republished complete in this country. It is not perhaps as attractive, upon the whole, as the *Lady of the Manor*, or *Roxabel*, yet it is attractive notwithstanding.

The number of volumes to which this edition will extend is not ascertained. Meanwhile, we hazard nothing, we are sure, in predicting ample encouragement to this new and meritorious enterprize of the Harpers.

†A fatal spasmodic disease peculiar, I believe, to the Valley of the Mississippi. It first attacks the cattle, and then those who eat beef or drink milk.

THE LADIES COMPANION, No. 1—New York: W. W. SNOWDEN—Another monthly Magazine, "devoted to Literature and the Fine Arts." Truly, we are abundantly supplied with light reading, but whether, it is as advantageous as it is abundant, "may be well questioned." This is a well printed miscellany, of about 50 pages—double columns; and with a great variety of stories, tales, and anecdotes, selected and original.

A SYSTEM OF MODERN GEOGRAPHY, with an Atlas, by G. M. HUNTINGTON. Hartford: E. HUNTINGTON & Co. New York: R. B. HOLMES.—This is designed for schools and academies, and as a general geographical reading book. It is a general and rapid view of the outlines geographically, and historically, of marking incidents in each country. The United States of course occupy a large space in a book designed for American schools, but it does not exclude from notice any other country. There are wood cuts, representing peculiarities of different people, public edifices, &c. The maps in the accompanying Atlas are colored, and apparently accurate. The whole seems carefully and skilfully prepared.

CONVERSATIONS OF A FATHER WITH HIS SON, ON SOME LEADING POINTS IN NATURAL PHILOSOPHY, by the Rev. B. H. DRAPER. New York, N. B. HOLMES.—There is no excuse for ignorance now a days, though possibly the very facilities which exist for acquiring elementary knowledge on all subjects, may lead to a neglect of that arduous, systematic, and persevering study which alone can make really learned men. Meanwhile let us welcome all of good we can—and as such we consider this little volume—which explains practically and intelligibly the phenomena of matter, of the solar system, of colors, and other analogous wonders, for such indeed they never cease to be even to those who thoroughly understand all about their laws. This little book is, too, very well printed.

FRENCH READER, OR A STEP TO TRANSLATION, &c., by JOS. F. A. BEUF: New York—Sold by the publisher, 28 Murray street, and by the booksellers generally.—This is a second edition of a work, prepared by a practical man, whose wide and intelligent experience as a teacher, has taught him the difficulties most obvious and common among learners, and who in these pages, has applied himself to diminish or overcome them. There is also a treatise, well executed, on pronunciation, the accents, &c.

LAW OF REAL PROPERTY.—An Essay on the law of real property in New Jersey, by WILLIAM M. SCUDER, Esq., will, as we learn, be issued from one of the New Jersey presses, sometime during the summer. It is recommended by Chief Justice Hornblower, of that State.

THE NEW ENGLAND MAGAZINE for June—Boston J. T. BUCKINGHAM—clever as usual—and varied.—It flags not in spirit or in interest. We extract a short passage, on a familiar subject.

DUNNING.

"Shut, shut the door, good John, fatigued, I said;

"Tie up the knocker, say I 'm sick, I 'm dead."

Misery, they say, acquaints a man with strange bed-fellows; and poverty acquaints him with unwelcome followers. The word dun—what the thing is, we need not in these times define—is derived from a troublesome fellow, a collector of bills, named John Dun. Happy mortal, he has gained immortality, like McAdam, by giving his name to a science.—John Doe and Richard Roe have not such general celebrity. I detest the name, and I love not the thing,—though it is principally for my friends that my sympathies are awakened. The last case in which I had a personal interest,—and though I write for Magazines, be it promulgated that I expect no other,—is a present call from the printer's demon for copy. Take it, and away. "So, being gone, I am myself, again."

The Chinese are a wise people; their institutions are perfect,—the paternal government is better than the presidential. They have one law, by the adoption of which, we should be more relieved than by the restoration of the depositories, the re-charter of the

Bank, or [even] the abdication of the President. It would be a great benefit to the public, and the very thing for me. In China, there are three hundred and sixty-four days of rest,—days wherein no one carries to another bill or note,—days on which, presents are inoperative, and duns illegal.

There are, however, countries in the East less enlightened than China, and also in the West. In "Merry England," what are the records of the Fleet, especially, in the last century, but a book upon the misfortunes and imprudencies of genius. Fielding was almost at home in it; descriptions of a prison, are his most familiar and graphic chapter. He describes like a man who was confined to his subject; like a wight who has no view of the world but what comes through a grated lattice. The very light of the sun on his cold floor, was chequered with bars. Debt, in England, is criminal, and poverty the heaviest of misfortunes. There are two great principles that sway the nation, which thinks it sways the earth, and which possesses but too much of this planet. These are Wealth and Fashion,—fashion is the strongest, from the deep-rooted aristocracy. The cousin of a Duke, or the flatterer of a Duchess, may be poor in all pride, and claim the precedence of fashion over mere opulence. This is the reason why the English are so shocked in America at our disregard, or happy ignorance of the local, conventional, fashionable modes of England, which, in England, were invented and are kept up with great care, to restrain the eruptions of the vulgar, for such, ninety-nine in the hundred are esteemed,—as the Romans built a wall across the island, to repress the incursions of the barbarians.

This may seem discursive,—but from Fashion to Duns, is but one step. In France, the wight subject to the latter, has less to endure than his contemporaries in England. A foreigner, however, is not favorably or hospitably distinguished by the law. He may be incarcerated for debt till death comes to release him.

It is evident, that in most nations, the rich make the laws,—for poverty is generally harshly treated. The debtor, in ancient Rome, might be sold to captivity across the Tiber. In some of the less enlightened countries, he is, at this day, a slave and may be sold like any other cattle. In China, there are laws that the creditor shall not seize for debt, the debtor or his wife, which shows that such a custom existed.

In this country, where every body is rich and thriving, debtors are hardly within the protection of the law; the legislation respecting them is of course different in various states. The slavery has been lightened in our own State, and the limits of the captive have been enlarged. In the times of the pious founders of our commonwealth the following lesson would have had its influence. It relates to a certain king who was not above overlooking his own treasure:

"And when he had begun to reckon, one was brought unto him which owed him ten thousand talents; but forasmuch as he had not to pay, his lord commanded him to be sold, and his wife and children, and all that he had, and payment to be made.—The servant therefore fell down and worshipped him, saying, Lord, have patience with me, and I will pay you all. Then the lord of that servant was moved with compassion, and loosed him and forgave him the debt. But the same servant went out, and found one of his fellow-servants, which owed him an hundred pence: and he laid hands on him, and took him by the throat, saying, Pay me that thou owest. And his fellow-servant fell down at his feet, and besought him, saying, Have patience with me, and I will pay thee all. And he would not; but went and cast him into prison, till he should pay the debt. So when his fellow-servants saw what was done, they were very sorry, and came and told unto their lord all that was done. Then his lord, after that he had called him, and said unto him, O thou wicked servant, I forgive thee all that debt, because thou desiredst me: shouldst not thou also have had compassion on thy fellow-servant, even as I had pity on thee? And his lord was wroth, and delivered him to the tormentors, till he should pay all that was due unto him."

The facilities of credit have sometimes been too great; dealers have been too ready to trust—that ill-omened word to both buyer and seller. When there is no security but in the character, or punctuality of the purchaser, this facility of credit will be much diminished. It has already had a bad effect on the public morals,—the younger class of dealers are more adventurous and enterprising, than the old.—Their word is not so good and their bond requires more sureties. The distinctions of *meum* and *tuum* have been shaken, and it is the duty of every good citizen and moralist to restore them to their original strength.

The first lesson to be planted and rooted in the

mind of a child is to love God, and never tell a lie. The second should be to shun debt, and respect the most trifling rights of property in others. To shun debt is, however, a sort of corollary to the lesson on truth; for he who has no debts, avoids the strongest temptation to tell a lie. Our veracity—all our virtues—the respect of the world—the respect of ourselves, depend upon *independence*. R. C.

SUMMARY.

THE COIN BILL.—We were in error yesterday, in our supposition that the bill which passed the House of Representatives on Tuesday, referred to our own gold and silver coins, as well as to foreign silver coins. It regulates the value of the latter only, at will be seen by the bill annexed, in the amend shape, in which it passed.

A Bill regulating the value of certain Foreign Silver Coins within the United States.

Be it enacted, &c. That from and after the passage of this act the following silver coins shall be of the legal value and shall pass current as money within the United States, *by tale*, for the payment of all debts and demands at the rate of one hundred cents the dollar; that is to say, the dollars of Mexico, Peru, Chili, and Central America, of not less weight than as now coined, and those restamped in Brazil of the like weight, when of not less fineness than ten ounces, fifteen pennyweights, and twelve grains of pure silver, in the troy pound of twelve ounces of standard silver; and the five-franc pieces of France, when of not less fineness than ten ounces and sixteen pennyweights in twelve ounces troy weight of standard silver, at the rate of ninety-three cents each.

Sec. 2. And be it further enacted, That it shall be the duty of the Secretary of the Treasury to cause assays of the aforesaid silver coins, made current by this act, to be had at the Mint of the United States at least once in every year, and to make report of the result thereof to Congress.

PHENIX BANK, New York, May 24, 1834.

Dear Sir—At a late meeting of the President and Directors of the Phenix Bank, the subject of redeeming the notes of all the banks in this State, *at par*, in the city of New York, was discussed.

The board has long been anxious to meet the often expressed wishes of the merchants, dealers and traders, and in the belief that no time can be more opportune than the present, I am instructed to communicate to you the intention of the Phenix Bank to receive in their daily exchanges from your bank, all notes issued by any or all of the Banks in the State of New York, at the par value thereof; provided the Banks in the city of New York will respectively keep a special deposit in the Phenix Bank, to cover the probable amount employed and the expenses incurred.

The advantages of this system to the citizens of our State—to all who are engaged in exchanging the products of her soil, or other commodities—are too apparent to need illustration.

Our banks will severally partake of the benefits to be derived from an improved currency, and an increased credit necessarily flowing from a system of greater security.

It is believed that the banks in the several counties of the State, will generally approve the contemplated measure, and by degrees will adopt it. Many have anticipated the change, well assured of advantage when the system shall be applied to the entire State.

Desirous to promote and effectively aid the above object, the President and Directors of the Phenix Bank solicit your attention thereto, and ask your co-operation. I am, respectfully, yours,

J. DELAFIELD, *Cashier.*

Dividend.—The Merchants' Bank have declared a dividend of three per cent, for the last six months, payable on the 2d June.

In Vermont, at half past five o'clock in the morning, of the 19th inst., a shock of earthquake was felt in several places.

[From the Globe of yesterday.]

We are happy to be able to contradict the report of the ravages of the Cholera among the troops at Fort Mitchell, Alabama. We learn from the Adjutant General, that an official report, dated the 22d of May, was received on the 2d inst. from Captain Fraser, the commanding officer of Fort Mitchell, in which he says not a word of sickness of any kind whatever. If the Cholera had been among the troops, or even prevalent at or near Fort Mitchell, it is believed that Captain Fraser would certainly have reported the circumstance.

Africa, fatal Africa, has added another to the long list of those who, seeking to explore her unknown regions, have found in them only a grave. *Lander*, the real discoverer of the course of the Niger, has perished—as we learn by the Canada—having been murdered 200 or 300 miles up that river. Others, however, will succeed to the place thus made vacant by death, for nothing can daunt the indomitable spirit of human enterprise.

[From a Philadelphia paper.]

TEMPERANCE ANNIVERSARY.—The Anniversary of the Pennsylvania Temperance Society was celebrated on Friday, the 24th inst., at the Central Church, in this city. MATTHEW NEWKIRK, Esq. the first Vice President, took the Chair. The meeting was opened with prayer, by Dr. Beman. A letter from Dr. P. S. Physick, the President of the Society, was read, apologizing for absence. Extracts from the seventh annual report were read by the Rev. John Marsh, Secretary of the Society. They represented the cause as in a very progressive state in many parts of Pennsylvania, and gave a highly gratifying picture of the good already effected through the exertions of the Society. The Rev. Dr. Tucker, of Troy, moved that the report be accepted and printed, which motion was carried. An appropriate Temperance Hymn was then sung.

The Rev. Dr. White, of South Carolina, made a handsome speech in support of the following:

Resolved, That the influence of the female sex, always powerful for good or evil, has been such in the benevolent institutions of the age, as to cause Christians to appreciate more highly than ever their intellectual and moral elevation in Christian countries; and that the friends of Temperance, grateful for the past, look with deep interest at their co-operation in their great and delightful work of reform.

The Rev. Dr. Mason, of New York, introduced the following:

Resolved, That while the Church of Christ is, and must continue to be, the standard and the means of a pure morality in our land, it is our urgent and imperative duty, in view of the light disclosed by the Temperance Reformation, to declare in her sanctuaries and court, how far she desires this reformation to proceed in its influence on herself, and how soon she desires to reach that point.

Dr. Mason took a deep view of the connexion between the Temperance Reform, and the interests of religion, and showed clearly what may well excite admiration and wonder, that the backwardness and opposition of many ministers and churches had been such as to make it questionable, whether professedly religious men had been most for it or against it. The church, however, of all denominations, are waking up, and he supported the sentiment of his resolutions, in a manner to make ministers and Christians in the house feel deeply on the subject.

Rev. Dr. Beman, of Troy, introduced the following resolution, and closed the meeting with much wit, pungency and eloquence:

Resolved, That the abandonment of more than 3000 distilleries in the United States, and the cessation from the traffic in ardent spirits of more than 7000 venders under the light of Temperance, shows that there is a moral power in the earth, (public sentiment) which may yet expel that traffic, the great source and support of intemperance, from the abodes of civilized man.

Military.—Major M. M. PAYNE of the United States Army arrived in this city from Fort Gratiot on Saturday with two companies of Artillery; one of which is to be stationed at Fort Hamilton, and the other with the Major at New London. This is the same prompt and efficient officer, who at the time of the *Black Hawk* expedition, received an order to repair to the frontiers with his Company at 10 o'clock in the morning, and at five in the afternoon was on the way from Baltimore to this city with his entire command. He has been kept since that period at Fort Gratiot at the foot of Lake Huron, whence he now returns with his Company, after a two year's absence on seven hours notice.—[Courier and Enquirer.]

DONATION TO THE POLISH EXILES.—We have received seventeen shirts, made by the young ladies belonging to the "Young Ladies' Sewing Association of the Reformed Dutch Church in Exchange place," which have been sent, according to direction, to the Executive Committee, "to be distributed among the exiled Poles lately arrived on our shores."

ANOTHER BANK STOPPED.—The Mechanics' Bank of Patterson, N. J. closed its doors last week. It has not been, for some time, in repute; therefore there are not a great many of its notes in circulation.

[From the Batavia Times, Extra, May 31.]

GREAT FIRE AT BATAVIA.—Our village is again a heap of ruins. A fire broke out yesterday, (Friday) about 5 o'clock, P. M. between two barns in the rear of the Eagle Tavern and the stand kept by Harvey Rowe. It was discovered at a very early stage of its progress—but it almost immediately communicated to the hay, some of which projected through the cracks of the adjoining barn. Then all hopes of extinguishing it were at an end. The attention of the citizens was directed to the preservation of what property contained in the houses could be got out.—It is impossible this time, to estimate the loss which has been sustained. The following is a list of the sufferers, as far as we have been able to ascertain them:

1. The Eagle Tavern, a large three story brick building, owned and occupied by B. Humphrey—together with the brick building which was attached to and formed a part of the tavern, except the first story, which was occupied by E. C. Dibble, Esq., and Judge Cumings, as offices. Mr. H. was insured on the building and furniture, \$6,700—Buffalo office.

2. The three story wooden building, occupied by Harvey Rowe, and owned by A. Champion, of Rochester. A part of the furniture was saved.

3. The Law Office, owned and occupied by Mess.

Taggart & Smith.

4. The tailor shop occupied by Leach & Jones.

5. An office occupied by Wm. H. Webster and Horace U. Soper, Esq., with a family above.

6. The dwelling occupied by Mr. Thomas Cole.

7. A dwelling in the rear of the one last named, occupied by Richard Smith, Esq.

8. A building owned by Erastus B. Seymour, and occupied by Chas. T. Buxton as a cabinet shop—by Gilbert & Seward as a tin shop. Mr. Seymour was insured \$300 at the Buffalo office.

9. A dwelling house owned by the widow Hewett, and occupied by John Putnam.

10. A law office owned by Ethan B. Allen, Esq., and occupied by Allen & Chandler.

11. A building owned by Ethan B. Allen, Esq., and occupied by Mr. Ottaway as a tailor shop and dwelling.

12. A building owned by Ebenezer Mix, Esq., and occupied by Mr. Putnam as a grocery.

13. A building in the rear of last named, owned by the same, and occupied by Mr. Leonard as a dwelling.

Both of the last named buildings were pulled down, and all of them was situated on Genesee street.

14. On Court street, a building occupied by James M'Allister.

15. A building owned by Cary & Grant, and occupied by James Harrington.

16. On Big tree street, a building owned by Cary & Grant. Messrs Cary & Grant were insured on the two last named buildings, \$500, at the Buffalo office.

17. Another building on Big tree street, but by whom it was owned or occupied we have not been able to learn.

Besides what has been enumerated, the extensive barns, shed and stables of Messrs. Humphrey, Homer, Rowe & Putnam, were entirely consumed with their contents, hay and oats. Horses, carriages, &c. all saved.

At one time our whole village was threatened with total destruction. The buildings on the north side of the street were on fire a number of times.

EXTRAORDINARY ARRIVAL.—At 1-2 past 11 o'clock, A. M., we received the United States (Phil.) Gazette of this morning, June 3d, (by the Rail Road Line,) from which we make the following extracts.

"We had a pleasant exhibition of the 'AURORA BOREALES' last evening."

Superfine flour continues steady at \$5.5. Some demand exists for Rye Flour, and sales have been made at \$3.50, which is a trifling advance. Corn Meal in brls. is selling at \$3. 5000 bushels Geneva Wheat was yesterday sold at \$1.15, to arrive.

The morning steamboat for New York of the Railroad Line, will leave Chesnut street wharf this morning, and the succeeding mornings of this week, at three instead of seven o'clock, as heretofore, and will arrive in New York at 11 o'clock, A. M. in time for morning travellers to reach the race ground before the races commence.

This arrangement will enable our neighbors of

Philadelphia to take an early dinner in New York and return home to tea, when there shall be a 12 o'clock line from New York.

Foot Race.—Yesterday afternoon, at 5 o'clock, Mr. C. W. Clauer, according to previous notice, commenced the undertaking of performing on foot the distance of twelve miles in eighty minutes, which he performed, as we understand, with ease in seventy-eight minutes. The ground over which he passed was from the corner of Fourteenth-st. and the Bowery to Harlem bridge and back.

SAILORS' FREAK.—At the Tremont Theatre in Boston on Monday evening, a party of sailors from the Frigate Potomac, amused themselves by drawing into the second tier of boxes a part of their companions who had taken their seats in the pit. This was done by means of handkerchiefs tied together. One of the taras thus promoted, weighed near 200 pounds.

It is stated that the body, to which we referred a day or two since, as having been taken from the Schuylkill, was that of J. Augustus STONE, Esq. the author of *Metamora* and several other dramatic pieces. We learn this with deep regret. Mr. Stone possessed many qualities calculated to endear him to a numerous circle of friends. He was, we learn, subject to fits of insanity.—[Philad. Inq.]

Extraordinary Trotting Match.—A bet of fifteen hundred dollars was made some time since, by Mr. B. R. THIELL, of this city, that his two horses would trot in harness one hundred miles in ten hours, over the Cenreville Trotting Course. This match against time came off on Saturday. The weather was propitious, there being so sun and the course in fine order. The horses, which are not thoroughbred, but ordinary road horses, started at 20 minutes past 9 o'clock, and performed their task in two minutes and twenty-five seconds less than the time allotted them. At starting the bets were two to one against the horses. After they had gone the first fifty miles however, opinions changed, and bets were freely offered in their favor. At eighty miles, the horses appeared a good deal distressed, and their backers seemed anxious to back out. A feeling that the horses would give in seemed indeed pretty generally to prevail during the last 20 miles, until the last half mile. But they got through their unprecedent task, and won the match for their owner in 9 hours, 57 minutes and 35 seconds. The crowd on the course was immense, and large sums of money were bet during the day. The horses were driven in a light wagon, and Mr. George SPICER was the reins-man.

Nothing equal to this has ever been done in any country before. Tom Thumb trotted in England 100 miles in 10 hours and 7 minutes, but it was in single harness.—[Courier.]

The last Galenian furnishes table of the quantity of lead annually made at the lead mines in the United States, from their first opening in 1821 to 1833, inclusive. The statement contains a remark that the lead is less abundant this spring than at any preceding time, and that comparatively speaking, little will be made this year. The whole quantity made during the twelve years mentioned, is set down at 63,845,740 lbs., of which 7,941,792 lbs. were made during the year 1833. The mining business during that time seems by the table to have fluctuated without any perceptible law of increase. The quantity of lead raised in 1828, was more than twelve millions of pounds, and the next year more than fourteen millions and a half. It fell in 1832 to little more than four millions. This variation arises, we suppose, from the want of a regular plan of operations, a deficiency of capital, and the uncertain tenure by which the lead mine lands are held.

We find in the Gazette of Thursday the following postscript :

Postscript.—The British cutter Post-Boy, Captain Toogood, arrived here last evening from Falmouth, England, whence she sailed on the 5th of May. The vessel has no cargo, and only a single letter to a mercantile house in this city. The public, of course, is left to conjecture the object of an arrival under circumstances so unusual. Judging from our own feelings, we can easily imagine how anxious our readers will be for more important information on the subject.

We learn that the above vessel belongs to the Messrs. Rothschild, bankers, and has brought out a large amount of specie, —rumor says, one million of dollars!!!

We regret to learn, that the house of the Rev. Mr. Davis, of Ballston, was burnt on Wednesday

last. A part of the furniture was saved; but the loss of Mr. D. over and above an insurance on the building, is said to be nearly \$3000.—[Saratoga Sentinel.]

[From the Baltimore American of Tuesday.]

Our highly esteemed fellow-townsman, CHRISTOPHER HUGHES, took his departure for the Eastward this morning, to embark at New York in the 8th packet for England, and thence to resume, at the capital of Sweden, his duties as the representative of the United States. He carries with him the warmest wishes of his numerous friends for a safe and pleasant voyage, and for the continued success of his efforts in the discharge of the responsible duties of his elevated station. The occasion of his departure has elicited from him the following Address, which it affords us pleasure to be the medium of communicating to his fellow-citizens :

TO MY FELLOW-CITIZENS OF BALTIMORE.

133 South Charles street, {
1st June, 1834. }

I have been twenty years in the foreign Diplomatic Service of my country. During that time, I have been AT HOME but four times, to re-visit my country; to see to my private affairs; and to nationalize my European-born children. I may say, that with the exception of the years 1815—16, passed in the State Legislature, I have been abroad since 1813. My three first diplomatic appointments—and I say it with pride—were conferred upon me by Mr. Madison; partly from his personal knowledge of me, and partly at the suggestion of Mr. Monroe, then Secretary of State. This last named eminent, virtuous and admirable man and patriot, when himself President of the United States, stated to me his regret, and his inability, (from the habit of the Government, and he believed, the expectation of the people, that high diplomatic rank could, and *should*, only be conferred upon those who had made themselves known to the Nation, by their services in the national Councils) to promote me to higher rank. He added—"Mr. Hughes, I dare not elevate you, to place and rank, for which I think you fit; it would be attributed to personal favoritism; for, though you are known, and advantageously known to the Administration, you are not known to the Nation. This is a pernicious usage and prejudice, of giving diplomatic missions only to prominent members, and party men, in the National Legislature; but, it is stronger than I am!"

Diplomatic fitness often turns upon other qualities; but, I repeat, I dare not do for you that which I wish, and you deserve, yet I will do something, that may be grateful to you—honorable and useful to you, hereafter—and proving my opinion and respect for you.—I will, if you will allow me, write you a letter—it may be a gratifying family archive—expressing my high value and opinion of your services; for no man has served his country with more zeal, fidelity, honor, and success, than you have done, during the ten years that you have been employed." This was in 1823. The conversation took place at midnight, and in the President's House. It was the last time I saw my venerable and venerated friend and patron. This, (nor any other) country, never produced, nor possessed a more faithful servant, a purer patriot, or a better man, than James Monroe. I knew him from my youth: I venerated and I loved him. And among the testimonies of character and success, in my most modest career, I hold his private letters to me, to be the most precious documents. My son shall inherit them, and his father's respect for the character of James Monroe.

I explained to Mr. Monroe "how happy I should have been to receive such a testimonial, if he had not previously consulted me on it, but *after consultation*, I begged respectfully to decline it." I was

I have been continued, as you know, by the succeeding Administrations, in diplomatic employment; true, under some, and heavy disappointments; but, a public man may not always choose.

I arrived at New York, in September last year, after an absence from my country of eight years. My object was to plant my children in the American soil. I am now about to return to my post, in Sweden. I will not say, my humble post—for humility may be associated with the representation of this great and happy Republic.

I embark on the 8th of June. I leave my children in America. Children should be reared in the country in which they are to live. They should be reared in its habits, its customs, its feelings, its doctrines, its sentiments—aye, even and better, in its *national prejudices*, (for national prejudices are always excusable—sometimes respectable,) rather than be brought

up in a foreign land. If this be true,—and I believe it,—it is especially true of Americans. Europe is a bad school for the education and rearing of Americans. I understand the word American as convertible with Republican. May they ever be synonymous. This is the principle of our political life—of our national and individual independence—happiness—peace—and importance, at home and abroad. Disturb—destroy this principle, admit, among you, any other distinction, than that which superior talents and superior virtue establish and command, and then only, "during good behavior," on which you are to pass, and for limited terms, which you are to renew,—admit among you any other, than the principle of political and social equality, and rottenness will creep into your foundations,—and your fabric must fall; your blessed and beautiful Union—(in whose duration I conscientiously believe, notwithstanding the recent throes and menaces, and for whose duration I will devote, as I am ready to stake, my life!)—your glorious Union must, and will split, into degraded, powerless, unhonored fragments! You will add another to the many memorable and mournful monuments of human weakness and folly; you will furnish another argument to the logic of the foul and pernicious foes of your institutions! You will strengthen the cause of tyrants and of aristocrats, who insolently maintain, that they, and only they, are fit to govern; for "that man is incapable of self-government."

Upon yourselves, my fellow-citizens, depend your national honor, happiness, and Liberty. Your national honor, happiness, and Liberty depend upon your Union, and your Union depends upon equality.

I am not more convinced of my Religion, than I am convinced of these truths. They have been the guides of my public and private life; they are engraven on my heart, and my heart has ever been, and ever will be, my Country's.

But, my fellow townsmen, it is not my object to address to you a political homily. You can have nothing to learn from me, in the value of your unsurpassed political and social advantages, nor the means to preserve and to perpetuate them. You know your privileges; you know their value. I know you; and knowing, I esteem and value you; and I should be unworthy of the constant and gratifying evidences of attachment, of kindness and of personal consideration, which since my boyhood I have received from you, in this my native town, if I did not beg leave to offer you my grateful and affectionate acknowledgements. I trust I am not pampering myself into the delusion of self-importance, if in my inability to call and take personal leave of the many I know and love—the companions of my boyish sports, and the esteemed associates of my riper years—if I respectfully ask to be permitted to take leave of you in this public manner; besides, it will be recollect, that though one man may receive three hundred visits in one day, it would be the work of many days for him, to return them in person.

As far as one, situated as I am, may speak of his movements, my notion is, that my absence from the United States will not be long.

"This is my own, my native Land."

I leave it with augmented attachment; I leave it, with increased knowledge of its resources, with a deeper conviction of its unequalled blessings; I leave it, with elevated sentiments of its grandeur and its destinies. May my countrymen watch over—preserve—and promote them!

I leave my country; and I leave my children. I will not remain long from either. To return to both, will be to me an elevated joy! and I shall then, whatever I may be worth, hold myself ready, as one of the People, to obey the call of the People, and to serve them as they may think me competent to serve my country.

Nothing but poverty could induce me to accept a paid office, at home. I say this, as man should say every thing, subject to circumstances and reflection. To represent one's fellow-citizens and neighbors—and at their call—is not an office in the ordinary sense of the word. It is the only place, in my present notions, that I would consent to fill; and only then, if called to it. When called to it, an American has no right to refuse; and this is the only right an American has not. This has ever been my opinion, on this first and most important of patriotic duties; and there is one other point, on which I have ever entertained and ever shall entertain, a fixed opinion, to wit—that it is the sacred duty of every American to vote at every election. If he omit to vote, he fails in one, perhaps the chief one, of his duties to his country.

My Fellow Townsmen, I bid you an affectionate, and a respectful farewell.

CHRISTOPHER HUGHES

[From the *Detroit Courier*, May 21.]

IMMIGRATION.—Our streets are again thronging with life, and crowds of emigrants are daily arriving, filling all our hotels and places of public resort to overflowing. It is computed that on Friday and Saturday of the past week alone, not less than two thousand strangers arrived in the different boats at our wharves. Some are reloading their furniture and starting at once in caravans for the interior with their families; while others who are more at leisure, or are awaiting public conveyances, are grouped around with pocket map of the interior in their hands, tracing their separate routes from this great rendezvous of western adventurers. There are expressions of satisfaction and cheerfulness in these strange faces which argue any thing but disappointment or discontent at the aspect of Michigan on the introduction. We are happy also to observe the appearance of robustness and health which these new comers present, in whom we seem already to recognize the hardy and enterprising materials for many new and flourishing settlements. This tide, which is constantly pouring onward along the great thoroughfare of waters, seems speedily to promise to Michigan her complete quota of inhabitants requisite for admission into the Union.

It is a fact which we presume none will venture to controvert, that our population both for integrity and intelligence, will sustain a most honorable comparison with that of our neighboring sisters of the States. A prominent cause of this may undoubtedly be traced to the fact that settlers here are invariably required to pay the amount of their purchases on occupation thereof; a requisition with which the better and more able class of emigrants alone can comply. We cannot but congratulate our new friends on their choice of a location in a land so full of fatness and of promise.

[From the *Quebec Gazette* 23d May.]

TOTAL LOSS OF THE JAMES OF LIMERICK, WITH 11 OF THE CREW AND 247 EMIGRANTS.

We have had a conversation with Mr. Downes, the Surgeon of the *James*, one of those saved from the vessel, and who signs the statement subjoined. There is no doubt on his mind that the vessel went down with all on board. The *Margaret*, which he was fortunate enough in gaining, after receiving very serious bodily injury while embarking in the boat, came to the spot where the *James* ought to have been, in an hour or two after he had left her, and she had then disappeared. From the condition in which she was left, there can be little doubt on his mind, that she must have foundered with all on board, or, at least, by far the greater number. Some chance of a portion being saved in the boats may exist; but as the *Margaret* had a light out, they very probably would have been enabled to have boarded her. No list of passengers has been saved, the Captain's having been left on board. Their names can now only be exactly ascertained by reference to the Custom House books at Limerick. Several of the families had been well to do in Ireland, and they had with them between £2,000 and £3,000 in gold; being in most part from Rathkeale and its neighbourhood, about fourteen miles from Limerick.—When the *James* left that port, deaths by cholera were daily occurring; but although several suspicious cases appeared, none had proved fatal on the passage.

To the Editor of the *Quebec Gazette*:

SIR: Allow me the liberty of intruding on your space with a more accurate detail of the circumstances connected with the loss of the *James*, which was rather imperfectly given in yesterday's *Mercury*.

We sailed from Limerick on the 8th April, with 251 passengers and a crew of 16. On Friday, the 11th, we put out to sea, where, after a few days, from heavy gales, &c. we experienced nothing but a series of misfortunes, having carried away our topmast, studding-sail-boom, jib boom, main-sail, fore-sail, and yard. On Sunday, the 25th, at six A. M. they set about pumping the ship out, but were not long thus engaged before the pumps were found to be choaked by the passengers' potatoes, which, from the rotten description of bags in which they were kept, went adrift about the hold, filling the pump wells, and preventing the possibility of working the pumps, which were hoisted on deck, and a great quantity of potatoes brought away from them; and to prevent a recurrence of this, tin kettles, with holes made in them, were laid on the heels, which proved ineffectual; after which, baskets were substituted, with as little success. Finding the water to increase to an alarming extent, and a gale from the N. W. springing up, with a heavy sea, the ship straining very much, we had recourse to the expedient of baling her out from the fore hatch with buckets

and a provision cask made fast to a tackle; but the water casks which were floating about there, excited the apprehensions of the people, and one passenger, Henry Morgan, getting three of his fingers broken between two of them, the attempt was abandoned. About 4 o'clock P. M. she shipped a sea which carried away the lee bulwarks, and was soon after struck by a second still heavier, with the force of which she listed, canting her ballast, and never returned to an erect position. The water having reached the between-decks, and no chance of saving her presenting itself, the Captain, at five o'clock, ordered the long-boat and skiff to be lowered, as a sail tacking to the southward made its appearance. The passengers crowded into the skiff while she was within the long-boat, and by this means made it difficult to lower the latter, which, when drawn from the after chock, came against the stanchions; after which, they did not seem inclined to take further trouble with her. At half-past six we lowered the jolly-boat, in which eleven of us were picked up by the *Margaret*, of Newcastle, Capt. Wake, to whose kindness and humanity since we are indebted for our preservation.

The persons saved are—Captain Laidler; Robert S. Laidler, his brother; Henry Downes, surgeon; Thomas Enwright, carpenter; James Cook, seaman; Peter Lilly Wall and James Clark, apprentices; with Mary Hasting, Andrew Young, James Shehan, and Edmund Curry or Cody, passengers.

Your obedient servant,

HENRY DOWNES, Surgeon of the *James*.

Still more distressing Intelligence.—Confirmation of the loss of the *James*, with upwards of 252 persons.—Loss of the bark *Astrea*, with 228 persons.—Loss of brig *Edward*.—Loss of brig *Fidelity*.—Loss of brig *Columbus*: all bound to Quebec.—Loss of bark *Charlotte Langin*, from Liverpool for Philadelphia.—Loss of ship *Marchioness of Queensbury*.—Loss of bark *John Atkins*, from Halifax for Richmond.—Loss of brig *Margaret*, from Belfast, and four lives.

Never, within our recollection, have we had to record such a list of disasters among shipping, and loss of lives, as has fallen to our lot this day. It will be seen from the following account, copied from the *Halifax Gazette* of the 21st instant, that the loss of the *James* is confirmed, together with numerous other vessels.

[From the *Halifax Gazette* of May 21.]

Our paper of today contains melancholy accounts of shipwrecks and the loss of human life. We saw a person yesterday who was at Louisburg when the *Astrea* was lost. The survivors had reached that place. They informed him that that vessel struck on the morning of the 7th instant, against some high cliffs at Little Lorain Head, about five miles from Louisburg and almost instantly went to pieces: that she had studding-sails set at the time, and up to the fatal moment of striking had gone at the rate of ten knots. The only individuals saved were the surgeon, carpenter and one seaman, who were thrown almost insensible on some of the cliffs.

SYDNEY, MAY 14.—Bark *Astrea*, William Ridley, master, with two hundred and eleven passengers and crew, went ashore at Lorain, near Louisburg, morning of 7th inst., and only the surgeon and two of the crew saved! Same day, brig *Edward* struck a piece of ice near Port Nova, and sunk immediately—crew saved. On the 11th, brig *Fidelity*, Clarke, from Dublin, for Quebec, went ashore on Scattari and was lost; passengers and crew, 15 in number, saved. Same day, brig *Columbus*, Russell, from Newcastle for Quebec, was lost three miles East of Louisburg, crew saved. On the 27th ult., lat. 45 20, lon. 48 53, the *Margaret*, Walsh, from Newcastle, picked up the captain of bark *James*, from Ireland for Quebec, with ten others, only survivors of two hundred and sixty-five persons on board the *James* when she sprung a leak and sank.

The crew of bark *Charlotte Langin*, of New Brunswick, from Liverpool for Philadelphia, has been landed here from an American fishing vessel. The ship had sprung a leak and they had abandoned her. They were three days in their boats.

Ship *Marchioness of Queensbury*, from Liverpool for Miramichi, went ashore on Cape Tormentine, night of 16th inst. but will be got off if the weather continues moderate.

Bark *John Atkins*, from Halifax for Richmond, went ashore three miles from that place, and was totally lost.

On the night of the 15th inst. brig *Margaret*, from Belfast for St. John, N. B., went ashore at Barrington, and was totally lost—crew saved. The mate's wife and four children were drowned.

[From the *Journal of Commerce*.]

LOCUSTS.

This year being the regular septemdecennial period for the re-appearance of locusts in our country, and these insects having already made their debut in some places, we cannot do less than devote a brief space to their history and habits. Whether the locust of the United States is of a different species from those which, at various intervals, have carried terror and desolation over large portions of the Eastern world, we cannot positively say; though it is certain that their visits have proved comparatively harmless. The history of the immense multiplication of locusts in some cases, and of the damage done by them, if it were not well authenticated, would be wholly incredible.

This has been chiefly in Oriental countries, where the insect has accordingly a proverbial reputation. "The land," says the Prophet Joel, "is as the garden of Eden before them, and behind them a desolate wilderness; yea, and nothing shall escape them." Again: "They shall run like mighty men; they shall climb the wall like men of war; and they shall walk every one in his own ways, and they shall not break their ranks; neither shall one thrust another."

This graphic description might by some be mistaken for a poetical exaggeration; but let us observe for a moment how remarkably it is accredited by the account the well known Dr. Shaw gives in his *Travels*, of the ravages of these animals in Barbary, in the spring of 1724, when they appeared in such numbers as absolutely to *darken the air*. After a while they retired into the plains to lay their eggs.—"These," says the traveller, "were no sooner hatched, than each of the broods collected itself into a compact body of a furlong or more square, and marching afterwards directly towards the sea, they let nothing escape them. They kept their ranks like men of war, climbing over, as they advanced, every tree or wall that was in their way; nay, they entered into our very houses and bed chambers, like so many thieves." He then goes on to state that attempts were made to stop their progress by fires of stubble and heath, but all to no purpose, so numerous were the swarms.

In 1797, Southern Africa was overrun in like manner, the traveller Barrow being there at the time; and he states that the whole surface of the ground, for an area of nearly two thousand miles, was literally almost covered with them, while the water of a wide river was scarcely visible on account of the carcasses of those drowned in endeavoring to come at the reeds on the banks. This was the third year of their continuance, and their increase from year to year was estimated at over a million fold. The year before, they had made great ravages, but were finally driven into the sea, which is their common fate, by a tempestuous north wind, and when they were afterwards cast upon the shore, Barrow says they made a bank three or four feet high, extending fifty miles in length, the taint of which was plainly perceptible at the distance of one hundred and fifty miles. It seems that during the night these insects discontinued their march and clustered together in large heaps; and at this time the farmers sometimes destroyed vast multitudes of them by driving among them a flock of several thousand sheep.

Pallas, in his *Travels in Russia*, gives a more minute description of their mode of march. After getting started in the morning, he says, they resemble a swarm of ants, all taking the same course, but without touching each other [*"neither shall one thrust another."*] They uniformly travel toward a certain region as fast as a fly can run, and without leaping, unless pursued. In their course, they advance from morning to evening without halting, frequently at the rate of a hundred fathoms and upwards a day.—"When their progress is opposed by ditches, they penetrate through them; their way can only be impeded by water, as they are apparently terrified by every kind of moisture. Often, however, they endeavor to gain the opposite bank, with the aid of overhanging boughs; and if the stalks of plants or shrubs be laid across the water, they pass in close columns over these temporary bridges, on which they even seem to rest, and enjoy the refreshing coolness. As soon as they acquire wings, they progressively disperse, but still fly about in large swarms."

As long since as 1650, mention is made of a cloud of locusts in Russia, which entered the country in three different places; and it is stated in a volume of the English Library of Entertaining Knowledge, and elsewhere, that they afterwards spread themselves over Poland and Lithuania in such numbers, that the earth was covered and the air darkened with them. The trees bent with their weight in

some instances, and in others they were seen lying on the ground dead, to the depth of four feet.

In some regions of the world they populate and migrate almost as regularly as certain species of birds. Irby and Mangold, in their Travels in Egypt and Syria, speak of seeing at the southern extremity of the Dead Sea, one morning, a swarm resting in a gully, in sufficient numbers to alter the color of the rocks they alighted on. The guides stated that they were on their way to Gaza, and that they passed almost annually. Volney also describes the movements of swarms which came under his own observation.

From Africa, which would appear to be the home of the animal, they have frequently come, in former times especially, into Italy and Spain. In the year '59, a vast phalanx of very large ones ravaged the former country far and wide, until they were at length driven into the sea; and it is recorded that a terrible pestilence arose from their stench, which carried off an incredible number of both men and beasts. Their depredations are said to have been such in the Venetian territory, in the year 1748, as to have occasioned a famine, in which 30,000 persons perished. There is certainly nothing improbable in this statement.

We cannot ascertain from the sources of information within our reach, that Great Britain has been infested by these insects to any considerable extent.—They appeared in England, it is stated, in 1798, but fortunately disappeared without propagating.

We shall add to these notices of the locust, as some of them may be considered apocryphal, or insufficiently authenticated, a reference to the ablest and minutest description of the same kind we have met with, and this is to be found in the missionary Kay's Caffarian Researches, published last year in London, and republished here recently by the Harpers. The year 1828 was, in the Cape of Good Hope Colony, ushered in, it seems, by "immense swarms" of these insects, which "literally darkened the Heavens for several days." On the wing, he says, they appear like a black cloud at a distance, but when they arrived at hand, their density intercepts the solar rays in such a manner as to cause an awful gloom, like an eclipse, and a noise like that of a torrent.—In some of the villages, they were spread on the ground so thickly that it was with the utmost difficulty the inhabitants could keep them out of their houses. The water conduits were filled; the rivers so contaminated that the waters were offensive to the smell; the herbage generally destroyed, the trees weighed down with them, and the vineyards laid waste. "Fields which the rising sun beheld covered with luxuries, are, before evening, a desert, for wherever they alight, not a leaf is left upon the trees, a blade of grass upon the pasture, nor an ear of corn in the field."

Mr. Kay speaks of the "frequent visits" of the locust as rendering the prospects of the agriculturists in that region extremely precarious. The antidote to the bane is found, to some extent, in the locust bird, which, according to a benevolent regulation of Providence, appears in myriads corresponding to the enemy it has to deal with, and makes great havoc among them. In 1833 their ravages were mostly prevented in this way.

Observations in that quarter of the world of which we have but spoken, add new illustrations to the reference made in Scripture to the ancient use of this insect for human food. In South Africa, not only do the cattle eat the locusts with avidity—perhaps, however, partly owing to the scarcity of better food which they occasion—but the Bushmen also, and other of the desert tribes, often gather them and lay them up for a winter store. The mode of curing and cooking is, to take off the wings and legs, then roast, then reduce the bodies to dust, and this is put up in bags like flour.

THE SERPENTS' BATH.—In the Bubbles from the Brunnens of Nassau, is the following account of the baths in that vicinity, said to be very efficacious in many diseases, and called the Schlangen-bad or Serpents' Bath :

"Once upon a time, it seems there was a heifer, with which every thing in nature seemed to disagree. The more she ate the thinner she grew—the more her mother licked her hide, the rougher and the more staring was her coat—not a fly in the forest would bite her—never was she seen to chew her cud—but, hide-bound and melancholy, her hips seemed actually to be protruding from her skin.—What was the matter with her no one knew—what could cure her no one could divine—in short, deserted by her master and her species, she was, as the faculty would term it, given up.

In a few weeks, however, she suddenly re-appeared among the herd, with ribs covered with flesh—

eyes like a deer—skin sleek as a mole's—breath sweetly smelling of milk—saliva hanging in ringlets from her jaws! Every day seemed to confirm her health, and the phenomenon was so striking, that the herdsman, having watched her, discovered that regularly every evening, she wormed her way in secret into the forest, until she reached and refreshed herself at a spring of water—haunted by harmless "serpents," when full grown, about four feet in length.

The circumstance, it seems, had been almost forgotten by the peasant, when a young Nassau lady began early to show exactly the symptoms of the heifer. Mother, sisters, father, friends, all tried to cure her—but in vain: and the physician actually

"Had taken his leave with sighs and sorrow,
Despairing of his fees tomorrow!"

When the herdsman happening to hear of her case, prevailed upon her at last to try the heifer's secret remedy; she did so, and in a very short time, to the utter astonishment of her friends, she became one of the stoutest young women in the duchy. What had suddenly cured one sick lady, was soon deemed a proper prescription for others, and all cases meeting with success, the spring gradually rose into notice and repute."

Lieut. Drummond's Artificial Lights. *National Gallery of Practical Science.*—There was on Wednesday evening literally a most brilliant exhibition of Lieut. Drummond's intense lights, applicable to light-houses, telegraphic signals, geodetical operations, and all purposes which require such light to be visible at great distances. Many hundreds of the most distinguished patrons of science and eminent practical scientific men were present on this interesting occasion; and the series of experiments were conducted with extraordinary effect; Mr. Payne, the manager of the gallery, having made all the previous arrangements which were requisite with great skill and judgment.

About two years ago we gave an account of Lieut. Drummond's method of producing this powerful glare of light, by the action of oxygen and hydrogen gas in a state of combustion on a ball of lime. We now saw an Argand lamp, with parabolic reflectors of such prodigious splendour that, as it revolved, it has been visible forty-four miles off; but even this was incomparably excelled by one of the new combinations, so dazzling that no eye could bear to gaze upon it in the line of reflection; and it was stated to be visible at the distance of sixty-six miles!! The next experiment was, we rather think, made for the first time in public, and consisted of the emission of the electric spark, with a parabolic reflector, and so rapidly continued as to form a perfectly continuous light. This was beautiful; and a magneto-electric light, demonstrating the efficacy of galvanism in producing intensity, was not less so. Colored lights were also exhibited; and, altogether, a more gratifying display of admirable and useful science never came under our cognizance. The noble gallery was crowded; and every visitor expressed delight and astonishment at the splendid varieties presented to their view.

Crocodile Bird—Translated from Herodotus.—Now as the crocodile lives much in the water, he has his mouth within quite covered with leeches.—All other birds and beasts shun the crocodile; but there is peace between him and the trochilus, inasmuch as he is benefited by that bird; for when the crocodile goes out from the water upon the land and opens his jaws, which he is wont to do, in order to receive the cool breeze, the trochilus then entering his mouth, devours the leeches; and he, delighted at the advantage he thus receives, never injures the trochilus."

Dromedaries.—The French are, it is stated, endeavoring to introduce dromedaries from Algiers into the Landes about Toulouse, where it is thought they may be very usefully employed.

THEY TELL ME LIFE, &c.

BY H. C. DEAKIN, ESQ.

They tell me life is like a dream, a bright, brief dream and o'er;
They tell me life is like a stream that seeks the ocean shore;
They tell me life is like a flower, that blooms but to decay;
If so, then life is only death, in holiday array!
But ah! I cannot think thy brow, my beautiful and bright,
Is but the seat where death enthroned feeds on thine eye of light;
Nor can I think that thy dear cheek, so redolent of bloom,
Is damañed only to attract the despot of the tomb.
For have not on thy brow, my love, my fond lips oft been prest?
And have I not in rapture oft, reclined upon thy breast?
And ah! how often have thy lips to thy betrothed's flown!
They tasted not of death, my love, I felt them but mine own!
Out on the withering thought that dooms such lustre to the grave!
I say 'tis false, for unto me, Heaven all thy beauty gave;
Away! away! I give to Death, to despot Death, the lie.
For God himself in love has said, "The virtuous never die."

STEPHENSON,
Builder of a superior style of Passenger Cars for Railroads
No. 204 Elizabeth-street, near Bleecker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.
J 25 t.

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

ALSO AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

JB ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nutt's Patent Tubular Boiler, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude. For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER, Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These Instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin' and Heartte.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark; by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROSE,

Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them, upon application, to any person desirous of perusing the same.

LATER FROM EUROPE.—By the packet ship *Canada*, Capt. Britton, from London, we have dates of the 1st of May, for which we are indebted to Messrs. *Grinnell & Minturn*. They came late to hand, and we are able only to give a few short extracts.

Mr. O'Connell's motion on the repeal of the Union was negatived, April 29, and Mr. Rice's Address to his Majesty, pledging opposition to the project, agreed to by a majority of 485 votes! the noes being 38.

The Debate on the repeal of the Union still continued.

The Lord Chancellor has made an earnest appeal in the House of Lords, to the better feelings of the Trade's Unions, with what effect we shall see.

The sum of 400,000l. in silver, had been shipped by one capitalist to Calais in one week, and great quantities to other parts of the continent.

At Berlin a change of the ministry had taken place, which had given much offence to the liberals. The investigation of the late seditious movements were still being carried on, and several persons arrested.

The *Journal des Debats* of Tuesday, May 28th, says, intelligence has reached government of the taking of Almeida, an important place on the frontier of Portugal, by the troops of Donna Maria.—This news created no sensation at Paris, though it is generally allowed that the affairs of the Peninsula are fast approaching a crisis.

M. De Chateaubriand has announced his intention to offer himself as a candidate to the electors of Lille. He resigned his seat in the peerage on the accession of Louis Philippe.

Some officers of the 36th regiment of the line, and others of the 4th and 9th cuirassiers have been arrested on suspicion of being connected with the republican associations.

The Spanish funds have arisen at Paris, in consequence of the convocation of the Cortez.

The city of Paris has been condemned to pay the damages and loss in several cases where gunsmiths and sword cutlers had sustained any, during the late revolutionary movements. Arrests are going on in France, and every means resorted to that can strengthen Louis Philippe on his throne. M. de S. Romain, a legitimist, has been arrested, and also one M. Mathew, an advocate, in whose possession a number of papers were found. A debate had occurred in the Chamber respecting the relinquishment of Algiers. Several fine speeches. No decision.

Portugal.—The cause of Miguel was suffering severely by desertion, 1300 men having deserted since the 1st of March.

Pedro, together with his ministers, has been excommunicated by the Pope.

Admiral Napier has been created a Count.

General Cardozo has been so hotly pursued by the Duke de Terceira, that it was supposed he would be obliged to take refuge in Spain, where he would give up his arms.

The entire country to the northward of the Douro has been cleared of the Miguelites.

SPAIN.—Quesada is in Vittoria, his corps encamped in the environs. El Pastor is at Tolosa. Butron in command of St. Sebastian. Zicmalacarregery with his brigade, the best in the service, is between Urdoch and Elizondo. Merino, with a troop of horse, was attempting to revolutionize old Castile, but met with no success. The Sentinelle of the Pyrenees speaks of a conspiracy to deliver up Tarragona to the Carlists.

The town of Almida in Portugal, had declared for the Queen. Don Carlos was there and had to fly—public feeling having manifested itself against him—some of his baggage was interrupted containing letters, which are exhibited as specimens of ignorance, being incorrectly spelt, and in bad style. It was expected he had doubled on his pursuers and entered Spain, which has induced his partisans to raise the standard of revolt in Aragon and Castile.

The Miguelites seem to be in bad plight in Portugal; and Don Carlos has been routed from his hiding place, by General Rodil and his command, who marched into Portugal in search of him. He is supposed to have gone into Spain.

The acknowledgment of Donna Maria by Spain, and the alliance offensive and defensive brought by last arrivals, is confirmed.

In consequence of the success of the Spanish troops in Portugal, under General Rodil, and the flight of Don Carlos, the Spanish funds at Madrid experienced a very great and sudden rise, which of course elevated them also at Paris.

The Ottoman fleet has arrived at Tripoli, and it is hoped will put an end to the civil war in that re-

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotives.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary

December 2d, 1833.

For further information on this subject see No. 48

772, Vol. 2, of Railroad Journal.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction & workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

W. M. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

I reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Gravitation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all Instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,

Germantown, and Norristown, Railroad

TOWNSEND & DUREE, of Palmyra, *Manufac-*
turers of Railroad Rope, having removed their establish-
ment to Hudson, under the name of *Duree, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbon date, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, *Jan 5 1833.*

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hampered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833.

A. G. of R. M. & F.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy: J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janvier, Baltimore; De Grand & Smith, Boston.

Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J. J. BURDEN.

H. BURDEN.

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch, 200 do. 1 1/2 do. 40 do. 2 1/2 do. 800 do. 2 1/2 do. 800 do. 2 1/2 do. Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axes of 2 1/2, 3 1/2, 4 1/2, 5 1/2, and 6 1/2 inches diameter for Rail Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pine, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment except those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta, Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN,

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

* * Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine. MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them by calling at 347 North Market street, Albany.